2019
CTTC
CALGARY, AB • JUNE 5-8, 2019

Scientific Program

ANNUAL CONFERENCE OF CELL THERAPY TRANSPLANT CANADA
June 5-8, 2019

Dear Friends:

I am pleased to extend my warmest greetings to everyone attending Cell Therapy Transplant Canada’s 2019 Annual Conference.

This event brings together blood and marrow transplant health care professionals to network with their peers and discuss key strategies in the field. I am certain that everyone in attendance will benefit from the presentations and sessions planned for this year’s conference, and will leave inspired to put what they have learned into practice.

I would like to thank the organizers for putting together this comprehensive program. I would also like to commend everyone in attendance for their commitment to advancing knowledge in the blood and bone marrow transplant field.

Please accept my best wishes for an enjoyable and productive conference in Calgary, Alberta.

Sincerely,

The Rt. Hon. Justin P. J. Trudeau, P.C., M.P.
Prime Minister of Canada
June 2019

A MESSAGE FROM MAYOR NENSHI

On behalf of my City Council colleagues and the citizens of Calgary, it is my pleasure to welcome you to the Cell Therapy Transplant Canada’s 6th Annual Conference.

I am so pleased that Calgary is able to host this conference. This annual event provides a wonderful opportunity for industry professionals from across the country to network and to expand their knowledge in the dynamic nature of the blood and marrow transplant field.

Thank you to all of those who dedicated their time and talent to making the sixth Annual Conference of Cell Therapy Transplant Canada a success.

Sincerely,

Naheed K. Nenshi
MAYOR
TABLE OF CONTENTS

Welcome Message
Board of Directors and Conference Planning Committee
Accreditation
Disclosures
Invited Speakers, Chairs, and Panelists
Conference App
Social Event Information
Westin Calgary Floor Plan
Conference-at-a-Glance
CBMTG Committee and Special Interest Group Meetings
Session Summaries
Oral Abstracts Index
Oral Abstract Summaries
Poster Abstracts Index
Poster Abstract Summaries
About CTTC
A MESSAGE FROM THE CTTC PRESIDENT

Dear Colleagues,

On behalf of the Board of Directors, I welcome you to the CBMTG Annual Conference in Calgary. At this, our 20th Anniversary, we are launching our new name — reflecting our expanding role in the cellular therapies. With your input we are now officially Cell Therapy Transplant Canada (CTTC). It is important that all members attend the annual general meeting to approve the name change and bylaws update on Friday.

Please join us for a Presidential session on the Thursday evening that will explore how our programs are preparing for the introduction of CAR-T and other cell therapies into the clinic. The session will focus on how we can leverage the CTTC expertise and membership resources from across Canada to successfully introduce these exciting therapies. I would like to thank Drs. Ronan Foley, John Kuruvilla, Jean-Sébastien Delisle, and Kristjan Paulson for leading us through this process.

The planning committee, led by Dr. Andrew Daly, has put together an exciting program that includes lectures, networking opportunities, posters sessions, and satellite symposia. It’s important to take advantage of the meeting to share ideas and get to know colleagues from across Canada with similar passions — you will make life-long connections. This is a great community.

The CTTC is working to include our patients and families into a more central role in the group. This year, the patient-caregiver symposium has been expanded and we truly encourage patients/families to participate in any part of the meeting.

I look forward to seeing everyone at the welcome and presidential receptions on Thursday night.

Finally, I would like to thank our sponsors for their ongoing support of the CTTC and our mission of education in cell therapy and blood/marrow transplantation. Without their support, meetings like this would not be possible. Please take the time to meet with the sponsors during the breaks, take in the exhibits and find out what’s new and exciting in the treatment pipeline.

Donna Wall, MD
CTTC President

A MESSAGE FROM THE CONFERENCE CHAIR

Dear Colleagues,

On behalf of the Planning Committee, I would like to take this opportunity to welcome you to CTTC Annual Conference in Calgary.

The Planning Committee has put together an exciting program that includes scientific plenary sessions, keynote presentations, multi-disciplinary and discipline-specific sessions, oral and poster abstract presentations, committee and society meetings, and corporate satellite symposia. We hope that this meeting will help prepare Canadian transplant programs to adapt to changes in the transplant landscape over the next five to ten years.

The CTTC will continue to encourage our patients and their families to become more active in our society. This year we welcome members of our Patient and Family Special Interest Group to BMT101B, a full-day program that highlights the changing landscape of post-transplant survivorship. A meet-the-expert program will introduce transplant survivors and their families to peer and expert coaches who can explain the ins and outs of caregiving, health maintenance and exercise after transplant. All are encouraged to attend.

I particularly look forward to seeing everyone on Friday night at the National Music Center.

And lastly, I would like to join our President in thanking our sponsors for their support of this meeting. Their support has not only made our meeting possible, but they continue to aid in our mission of making Canada a prime leader in cell therapy and transplantation. Please meet with our sponsors during the breaks, interact with the exhibits and learn about everything that’s becoming available for treatment in our field.

Andrew Daly, MDCM, FRCP
Chair, Planning Committee
CBMTG BOARD OF DIRECTORS

President
Donna Wall, MD

President-Elect
Kristjan Paulson, MD, FRCPc

Past President
Andrew Daly, MD

Treasurer
Auro Viswabandya, MD

Secretary
Charlene Downey, MN, NP(Adult), RN, CON (c)

Director at-Large, Education
Kylie Lepic, MD, FRCPc

Director at-Large, Research
Kirk Schultz, MD, FCAHS

CONFERENCE PLANNING COMMITTEE

CHAIR: Andrew Daly, MD

COMMITTEE MEMBERS:

David Sanford, MD
Irwindeep Sandhu, MD
Jean-Sebastien Delisle, MD
Jonathan How, MD
Kareem Jamani, MD
Kevin Weingarten, MD
Kylie Lepic, MD, FRCPc
Meera Sharini Rayar, MD
Nicole Prokopishyn, PhD
Guy Cantin, MD
Nikki Blosser, BSc, Pharm, ACPR
Philip Berardi, MD
Reanne Booker, RN, BScN, MN, NP
Tony Truong, MD

ACCREDITATION

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and approved by the University of Calgary Office of Continuing Medical Education and Professional Development. You may claim a maximum of 17 hours (credits are automatically calculated).

Day 1: 3.75 hours Day 2: 4.75 hours Day 3: 5.5 hours Day 4: 3.0 hours

Claiming your credits: Visit MAINPORT https://mainport.royalcollege.ca to record your learning and outcomes.
DISCLOSURES

Sara Beattie – Speaker
• Research Grants - CIHR

Reanne Booker – Speaker
• Funded Grants – University of Victoria – Graduate Fellowship

Jean-Sebastien Delisle – Speaker
• Research Grants – SpecificiT Pharma
• Drug Patents – SpecificiT Pharma

Geoff Eaton – Speaker
• Investments – Young Adult Cancer Canada

Kareem Jamani – Speaker
• Honoraria - Sanofi Genzyme, Pfizer, Bristol-Myers Squibb

Jennifer Jupp – Speaker
• Honoraria – Canadian Association of Pharmacy in Oncology, CBMTG

Hagop Kantarjian – Speaker
• Research Grants – AbbVie, Agios, Amgen, Ariad, Astex, BMS, Cyclacel, Daiichi-Sankyo, Immunogen, Jazz Pharmaceuticals, Novartis, Pfizer
• Honoraria – AbbVie, Actinium Pharmaceuticals, Agio, Amgen, Immunogen, Orsinex, Pfizer, Takeda

Joerg Krueger – Speaker
• Advisory Board – Novartis
• Clinical Trials – Novartis, Gilead/Kite

Amrita Naipaul – Speaker
• Investments – Novartis

Claude Perreault – Speaker
• Research Grants – AbbVie
• Drug Patent – University of Montreal

Stanley Riddell – Speaker
• Advisory Board – Juno Therapeutics - a Celgene Company, Adaptive Biotechnologies, Nohla Therapeutics, Lyell Immunopharma
• Research Grants – Juno Therapeutics - a Celgene Company, Lyell Immunopharma
• Drug Patents – Juno Therapeutics - a Celgene Company, Lyell Immunopharma
• Investments – Juno Therapeutics - a Celgene Company, Lyell Immunopharma

Matthew Seftel – Speaker
• Honoraria – CADTH
• Advisory Board – Pfizer
• Research Grant – Teva Canada Innovation
• Clinical Trials – Gilead Sciences Inc.

Christopher Venner – Speaker
• Honoraria – Celgene, Inc., Amgen, Janssen Pharmaceuticals, Takeda

Irwin Walker – Speaker
• Honoraria – Jazz Pharmaceuticals
• Advisory Board – Jazz Pharmaceuticals
• Clinical Trials – Sanofi Genzyme

Lauren Walker – Speaker
• Honoraria – Abbvie
• Research Grant – Prostate Cancer Canada, Alberta Cancer Foundation, Abbie, Astellas
INVITED SPEAKERS, CHAIRS, AND PANELISTS

K. Scott Baker, MD, MS, Fred Hutchinson Cancer Research Center, Seattle, WA, USA
Sara Beattie, PhD, R. Psych, Tom Baker Cancer Centre, Calgary, AB, Canada
Nikki Blosser, BSc, Pharm, ACPR, Blood and Marrow Transplant Clinic, Tom Baker Cancer Centre, Calgary, AB, Canada
Reanne Booker, MN, NP, Tom Baker Cancer Centre, Calgary, AB, Canada
Matthew Clancy, Calgary, AB, Canada
Andrew Daly, MD, FRCP, Alberta Bone Marrow Transplant Program, Calgary, AB, Canada
Jean-Sebastien Delisle, MD, FRCP, PhD, Hôpital Maisonneuve-Rosemont, University of Montréal, Montreal, QC, Canada
Allan De Luca, Toronto, ON, Canada
Simon Dufresne, MD, Hôpital Maisonneuve-Rosemont, Université de Montréal, Montreal, QC, Canada
Geoff Eaton, Young Adult Cancer Canada, St. John’s, NL, Canada
Areej El-Jawahri, MD, Massachusetts General Hospital, Boston, MA, USA
Dean England, BSc Pharm, Tom Baker Cancer Centre, Calgary, AB, Canada
Randi Gurholt-Seary, Vancouver, BC, Canada
April Hillman, BSc, ADipHL, MLT, Alberta Public Laboratories - Cellular Therapy Laboratory, Foothills Medical Centre, Calgary, AB, Canada
Kareem Jamani, MD, FRCP, University of Calgary/Alberta Blood & Marrow Transplant Program, Calgary, AB, Canada
Jennifer Jupp, BScPharm, BCOP, Alberta Health Services, Alberta Children’s Hospital, Calgary, AB, Canada
Hagop Kantarjian, MD, MD Anderson Cancer Center, Bellaire, Texas, USA
Anne Katz, PhD, RN, FAAN, CancerCare Manitoba, Winnipeg, MB, Canada
Ellen Kennedy, BScN, Alberta Health Services, Calgary, AB, Canada
Joerg Krueger, MD, The Hospital for Sick Children, Toronto, ON, Canada
Kylie Lepic, MD, FRCP, Juravinski Hospital and Cancer Centre, Hamilton, ON, Canada
Catherine Leysnon, BSP, Tom Baker Cancer Centre, Calgary, AB, Canada
Jeffrey Lipton, PhD, MD, FRCP, Princess Margaret Cancer Centre, Toronto, ON, Canada
Amrita Naipaul, MBA, MSN, PCCNP, BScN, The Hospital for Sick Children, Toronto, ON, Canada
Julie Park, MD, Seattle Children’s Hospital, Seattle, WA, USA
Claude Perreault, MD, FCAHS, IRIC - Université de Montréal, Montréal, QC, Canada
Nicole Prokopishyn, PhD, Alberta Public Laboratories - Cellular Therapy Laboratory, Foothills Medical Centre, Calgary, AB, Canada
Stanley Riddell, MD, Fred Hutchinson Cancer Research Center, Seattle, WA, USA
Jacob Rozmus, MD, PhD, FRCP, BC Children’s Hospital, Vancouver, BC, Canada
Kirk R. Schultz, MD, BC Children’s Hospital, Vancouver, BC, Canada
Matthew Seftel, MD MPH, FRCP, FRCP, CancerCare Manitoba, Winnipeg, MB, Canada
Lindsay Thompson, Calgary, AB, Canada
Anne Tremblay, RN, BScN, Alberta Health Services, Tom Baker Cancer Centre, Calgary, AB, Canada
Patrick Trépanier, PhD, MBA, Héma-Québec, Laval, QC, Canada
Christopher Venner, MD, BSc, FRCP, Cross Cancer Institute, Edmonton, AB, Canada
Irwin Walker, MD, Juravinski Hospital and Cancer Centre, Hamilton, ON, Canada
Lauren Walker, PhD, R. Psych, Alberta Health Services, Department of Psychosocial & Rehabilitation Oncology, Calgary, AB, Canada
Donna Wall, MD, The Hospital for Sick Children, Toronto, ON, Canada
SOCIAL EVENT INFORMATION

NETWORKING SESSIONS

**WEDNESDAY, JUNE 5, 2019**

7:00pm – 8:30pm

<table>
<thead>
<tr>
<th>Session Type</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing Networking Session</td>
<td>Eau Claire North</td>
</tr>
<tr>
<td>Pharmacist Networking Session</td>
<td>Bow Valley</td>
</tr>
<tr>
<td>BMT Physicians Meeting</td>
<td>Nakiska Room</td>
</tr>
<tr>
<td>Administrators and BMT Coordinators Networking Session</td>
<td>Bow Valley</td>
</tr>
<tr>
<td>Laboratory Networking Session</td>
<td>Bow Valley</td>
</tr>
<tr>
<td>Advanced Practitioners Networking Session</td>
<td>Eau Claire North</td>
</tr>
<tr>
<td>Welcome Reception</td>
<td>Exhibition: Mayfair &amp; Endrooms</td>
</tr>
</tbody>
</table>

SOCIAL EVENT

**FRIDAY, JUNE 7, 2019**

7:00pm Onwards

National Music Centre
850 4 Street SE
Calgary, AB T2G 1R1

**Registration:**
Tickets are free of charge for all full conference delegates, though pre-registration is required. Guest tickets may be purchased from the CTTC Head Office. The registration deadline is Monday, June 3, 2019.

**Transportation:**
Transportation has been arranged to bring delegates from the conference hotel to the social event venue. Shuttles will begin at 6:30pm and run until 7:00pm. Delegates are asked to meet in the hotel lobby for shuttle service.
Did you know that there is a conference app that you can download that lists all of the session information, speakers, speaker bios, abstracts, venue maps, and other important conference information?

Download the app onto your iPhone, iPad, Android, or Blackberry by scanning the QR code below or searching for “CTTC” in your phone’s app store.

![QR Code]

**FREE WIFI AT CTTC 2019**

Network: WESTIN_CONFERENCE
Password: CTTC2019
## CONFERENCE AT A GLANCE

### PRE-CONFERENCE DAY – WEDNESDAY, JUNE 5, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30am – 5:00pm</td>
<td><strong>FACT WORKSHOP</strong></td>
<td>Nakiska</td>
</tr>
<tr>
<td>9:30am – 5:00pm</td>
<td>Speaker Services</td>
<td>Banff Room</td>
</tr>
<tr>
<td>9:30am – 5:00pm</td>
<td>Registration</td>
<td>Central Foyer</td>
</tr>
<tr>
<td>10:30am – 12:15pm</td>
<td><strong>BMT 101A: HEALTH CARE PROFESSIONALS</strong></td>
<td>Bow Valley</td>
</tr>
<tr>
<td></td>
<td>Chair: Kylie Lepic, <em>MD, FRCPC</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Opening Remarks</strong> – Kylie Lepic, <em>MD, FRCPC</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Conundrum: How Do You Decide Whether A Patient Is Eligible For Transplant?</strong> – Andrew Daly, <em>MD</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Practical Issues with CAR-T</strong> – Joerg Krueger, <em>MD</em></td>
<td></td>
</tr>
<tr>
<td>12:15pm – 1:30pm</td>
<td>Lunch</td>
<td>Lower Foyer</td>
</tr>
<tr>
<td>1:30pm – 4:00pm</td>
<td><strong>Invasive Fungal Infections After Hematopoietic Stem Cell Transplantation</strong> – Simon Dufresne, <em>MD</em></td>
<td>Eau Claire North</td>
</tr>
<tr>
<td></td>
<td><strong>An Introduction to Diagnosing and Grading Chronic GVHD</strong> – Kareem Jamani, <em>BSc, MD</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Long Term Follow Up for Allogeneic Stem Cell Transplant Survivors</strong> – Jeffrey Lipton, <em>PhD, MD, FRCPC</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Closing Remarks and Evaluation</strong> – Kylie Lepic, <em>MD, FRCPC</em></td>
<td></td>
</tr>
<tr>
<td>4:00pm – 4:30pm</td>
<td>Health Break</td>
<td>Lower Foyer</td>
</tr>
<tr>
<td>4:30pm – 7:00pm</td>
<td><strong>PATIENT AND FAMILY SYMPOSIUM: ASK THE EXPERT</strong></td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td></td>
<td>Chairs: Peter Malone &amp; Lindsay Thompson</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Survivornship</strong> – Allan De Luca</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Developing a Personalized Approach to Health Maintenance after Stem Cell Transplant</strong> – Kareem Jamani, <em>MD</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Caregivers: Stepping Through the Looking Glass Without Breaking</strong> – Randi Gurholt-Seary</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>GVHD: Current Status and Novel Treatments</strong> – Andrew Daly, <em>MD</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Nutrition and Exercise</strong> – Nicole Culos-Reed, <em>PhD</em></td>
<td></td>
</tr>
<tr>
<td>5:00pm – 9:00pm</td>
<td><strong>CBS STEM CELL EXPERT ADVISORY COMMITTEE</strong></td>
<td>Lougheed</td>
</tr>
<tr>
<td></td>
<td><strong>NURSING NETWORKING SESSION</strong></td>
<td>Eau Claire North</td>
</tr>
<tr>
<td></td>
<td><strong>ADVANCED PRACTITIONERS NETWORKING SESSION</strong></td>
<td>Eau Claire North</td>
</tr>
<tr>
<td></td>
<td><strong>PHARMACIST NETWORKING SESSION</strong></td>
<td>Bow Valley</td>
</tr>
<tr>
<td></td>
<td><strong>ADMINISTRATORS AND BMT COORDINATORS NETWORKING SESSION</strong></td>
<td>Bow Valley</td>
</tr>
<tr>
<td></td>
<td><strong>LABORATORY NETWORKING SESSION</strong></td>
<td>Bow Valley</td>
</tr>
<tr>
<td>7:00pm – 8:30pm</td>
<td><strong>BMT PHYSICIANS MEETING</strong></td>
<td>Nakiska</td>
</tr>
</tbody>
</table>
### DAY 1 – THURSDAY, JUNE 6, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30am – 4:00pm</td>
<td>Speaker Services</td>
<td>Banff Room</td>
</tr>
<tr>
<td>6:30am – 5:00pm</td>
<td>Registration</td>
<td>Central Foyer</td>
</tr>
<tr>
<td>7:00am – 8:45am</td>
<td>CORPORATE SYMPOSIUM WITH BREAKFAST</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>9:00am – 12:00pm</td>
<td>SESSION 1</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>9:00am – 9:15am</td>
<td>Welcome to the Conference</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>10:45am – 12:00pm</td>
<td>Implementation of CAR-T: Panel Discussion</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>12:15pm – 1:45pm</td>
<td>CORPORATE SYMPOSIUM WITH LUNCH</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>2:00pm – 5:00pm</td>
<td>SESSION 2A</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>2:00pm – 5:00pm</td>
<td>SESSION 2B: LABORATORY – TECHNOLOGISTS AND TECHNOLOGY – YOU CAN’T HAVE ONE WITHOUT THE OTHER!</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>3:00pm – 3:30pm</td>
<td>Health Break</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>3:00pm – 3:30pm</td>
<td>SESSION 2C &amp; 2D</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>3:00pm – 3:30pm</td>
<td>One Percent is Not Zero Percent: A Survivor Story</td>
<td>Britannia &amp; Belaire</td>
</tr>
</tbody>
</table>

**Schedule**

- **9:00am – 9:15am**: Welcome to the Conference - Donna Wall, MD
- **9:15am – 10:15am**: Hans Messner Lectureship: Enhancing the Safety and Efficacy of Genetically Engineered T-cells in Cancer Therapy - Stanley Riddell, MD
- **10:15am – 10:45am**: Health Break
- **10:45am – 12:00pm**: Implementation of CAR-T: Panel Discussion - Nicole Prokopishyn, PhD, J-S. Delisle, MD, PhD, Amrita Naipaul, MBA, MsN, BSc
- **2:00pm – 5:00pm**: SESSION 2A - Chair: Jean-Sebastien Delisle, MD, PhD
- **2:00pm – 5:00pm**: SESSION 2B: LABORATORY – TECHNOLOGISTS AND TECHNOLOGY – YOU CAN’T HAVE ONE WITHOUT THE OTHER! - Chair: Nicole Prokopishyn, PhD
- **3:00pm – 3:30pm**: Health Break
DAY 1 – THURSDAY, JUNE 6, 2019

SESSION 2A (CONTINUED)
Toward the Cure Adult ALL in the near Future
Hagop Kantarjian, MD

SESSION 2B (CONTINUED)
Electronic Records – Advancing QA Analysis for Transplant
April Hillman, BSc, ADipHL, MLT

Stem Cells Potency Assessment Using A Validated Novel Rapid Flow Cytometry Assay –
Patrick Trepanier, PhD, MBA

SESSION 2C (CONTINUED)
Chair: Nikki Blosser, BSc, Pharm, ACPR
Eau Claire North
Pediatric Specific Complications and the Transition Into Adult Care: Panel Discussion
Catherine Leyshon, BSc Pharm
Jennifer Jupp, BSc Pharm, BCOP
Matthew Clancy
Anne Tremblay, RNBScN
Ellen Kennedy, BSc

A Matter Of The Heart: Late Cardiovascular Toxicity After Hematopoietic Cell Transplant
Kareem Jamani, BSc, MD

SESSION 2D (CONTINUED)
Chair: Reanne Booker, RN, BScN, MN, NP
Eau Claire South
Opportunities Lost: Fertility Presentation for Individuals Prior to Transplant
Anne Katz, PhD, RN, FAAN

Medical Cannabis in Oncology
Reanne Booker, RN, BScN, MN, NP and Dean England, BSc Pharm.

5:00pm – 6:00pm WELCOME RECEPTION
Exhibition: Mayfair & Endrooms | Posters: Bonavista

6:30pm – 8:00pm CTTC PRESIDENTIAL SYMPOSIUM ON CELLULAR THERAPY
Britannia & Belaire

8:00pm – 9:00pm PRESIDENT’S RECEPTION
South Foyer

DAY 2 – FRIDAY, JUNE 7, 2019

6:30am – 4:00pm Speaker Services
Banff Room

6:30am – 5:00pm Registration
Central Foyer

7:00am – 8:45am CORPORATE SYMPOSIUM WITH BREAKFAST
Britannia & Belaire

9:00am – 10:00am SESSION 3
Chair: Kirk R. Schultz, MD
Fred Saunders Lectureship - Late Effects in Pediatric Survivors after Hematopoietic Cell Transplantation: Preparing Kids for Long Term Survival Through Adulthood
K. Scott Baker, MD, MS

10:00am – 10:15am Health Break
Mayfair and Endrooms

10:15am – 11:15am CTTC ANNUAL GENERAL MEETING
Britannia & Belaire

11:30am – 1:00pm CORPORATE SYMPOSIUM WITH LUNCH
Britannia & Belaire
## SCIENTIFIC PROGRAM

### DAY 2 – FRIDAY, JUNE 7, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:15pm – 3:15pm</td>
<td>SESSION 4: MANAGING AND PREVENTING ADVERSE PSYCHOSOCIAL COMPLICATIONS</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Sara Beattie, PhD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Integration of Palliative Care into the Care of Patients with Hematologic Malignancies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Areej El-Jawahri, MD</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Moving Beyond Toxicity:</strong> Optimizing Sexual Health after Hematopoietic Stem Cell Transplantation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reanne Booker, RN, BScN, MN, NP</td>
<td></td>
</tr>
<tr>
<td>3:15pm – 3:30pm</td>
<td>Health Break</td>
<td>Mayfair and Endrooms</td>
</tr>
<tr>
<td>3:30pm – 5:00pm</td>
<td>ORAL ABSTRACT PRESENTATIONS</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Donna Wall, MD</td>
<td></td>
</tr>
<tr>
<td>5:00pm – 6:00pm</td>
<td>POSTER ABSTRACT PRESENTATIONS</td>
<td>Bonavista</td>
</tr>
<tr>
<td>7:00pm Onwards</td>
<td>SOCIAL EVENT: NATIONAL MUSIC CENTRE</td>
<td></td>
</tr>
</tbody>
</table>

### DAY 3 – SATURDAY, JUNE 8, 2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30am – 4:00pm</td>
<td>Speaker Services</td>
<td>Banff Room</td>
</tr>
<tr>
<td>8:30am – 5:00pm</td>
<td>Registration</td>
<td>Central Foyer</td>
</tr>
<tr>
<td>9:00am – 10:30am</td>
<td>SESSION 5: CONTROVERSIES IN AUTOLOGOUS TRANSPLANTS: AN ADULT &amp; PEDIATRIC PANEL DISCUSSION</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Andrew Daly, MD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Autologous Transplant for Multiple Myeloma: Yes or No? – Christopher Venner, MD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAR-T Cell Therapy of Pediatric Solid Tumor and CNS Malignancies: Progress and Challenges – Julie Park, MD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Autologous Transplants for Pediatric Autoimmune Disease – Jacob Rozmus, MD, PhD, FRCPC</td>
<td></td>
</tr>
<tr>
<td>10:30am – 11:00am</td>
<td>Health Break</td>
<td>Mayfair and Endrooms</td>
</tr>
<tr>
<td>11:00am – 12:30pm</td>
<td>SESSION 6: DEBATE: CAR-T CELLS VS. ALLOGENEIC TRANSPLANT FOR PATIENTS WITH RELAPSED ALL</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td></td>
<td><strong>Chair:</strong> Andrew Daly, MD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CAR-T Cells Relapsed Acute Lymphoblastic Leukemia – Matthew Seftel, MD MPH FRCPC FRCP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allogeneic Bone Marrow Transplantation for Relapsed Acute Lymphoblastic Leukemia – Irwin Walker, MD</td>
<td></td>
</tr>
<tr>
<td>12:30pm – 1:00pm</td>
<td>Lunch</td>
<td>Britannia &amp; Belaire</td>
</tr>
<tr>
<td>1:00pm – 4:00pm</td>
<td>COMMITTEE MEETINGS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Network Meeting</td>
<td>Bow Valley</td>
</tr>
<tr>
<td></td>
<td>Laboratory Committee Meeting</td>
<td>Eau Claire South</td>
</tr>
</tbody>
</table>
SPECIAL INTEREST GROUP MEETINGS

NURSING NETWORKING SESSION
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**EAU CLAIRE NORTH**

The Nursing Special Interest Group of CTTC will be hosting a networking session for all nursing delegates of the CTTC annual meeting. We hope to see you there!

The evening is free of charge for all nurses attending the CTTC Annual Meeting. Drinks and hors d’oeuvres will be provided. Pre-registration is encouraged.

PHARMACIST NETWORKING SESSION
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**EAU CLAIRE SOUTH**

The CTTC is happy to invite all BMT pharmacists to attend a networking and social event. Join us to connect with other pharmacists from across Canada over drinks and hors d’oeuvres.

ADMINISTRATORS AND BMT COORDINATORS NETWORKING SESSION
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**BOW VALLEY**

The CTTC is happy to invite all administrators and BMT coordinators to attend a networking and social event. Join us to connect with other administrators and BMT coordinators from across Canada over drinks and hors d’oeuvres.

LABORATORY NETWORKING SESSION
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**BOW VALLEY**

The CTTC is happy to invite all laboratory technicians to attend a networking and social event. Join us to connect with other laboratory technicians from across Canada over drinks and hors d’oeuvres.

ADVANCED PRACTITIONERS NETWORKING SESSION
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**EAU CLAIRE NORTH**

The CTTC is happy to invite all advanced practitioners to attend a networking and social event. Join us to connect with other advanced practitioners from across Canada over drinks and hors d’oeuvres.

BMT PHYSICIANS MEETING
**WEDNESDAY, JUNE 5, 2019, 7:00PM – 8:30PM**

**NAKISKA ROOM**

The CTTC is happy to invite all BMT and cellular therapy physicians to attend a networking and social event. Join us to connect with other physicians from across Canada over drinks and hors d’oeuvres.
CTTC ANNUAL GENERAL MEETING

FRIDAY, JUNE 7, 2019, 10:15AM – 11:15AM

BRITANNIA & BELAIRE

The CTTC Board of Directors invites all CTTC members to attend the Annual General Meeting of the association. The Board of Directors will report on the activities of the association over the last year, recognize award recipients and craft the direction for our future. This is your opportunity to provide feedback or offer suggestions to the CTTC Board regarding the strategic direction of the association.

CTTC RESEARCH NETWORK (RN) MEETING

SATURDAY, JUNE 8, 2019, 1:00PM-4:00PM

BOW VALLEY

Dr. Kirk Schultz, CTTC Director of Research, will discuss current projects of the CTTC Research Network (RN) as well as proposed studies and visioning for the future of the network with cellular therapeutics. Dr. Kristjan Paulson, lead of the CTTC National Registry and President-Elect, will discuss the current status of the registry as well as upcoming projects. All conference delegates are invited to attend this session.

LABORATORY COMMITTEE MEETING

SATURDAY, JUNE 8, 2019, 1:00PM-4:00PM

EAU CLAIRE SOUTH

The laboratory technologist special interest group is a networking and resource opportunity for laboratory professionals. It focuses on technical and regulatory issues. The group currently has 42 members from across Canada and continues to grow along with the CTTC. All laboratory technologist conference delegates are invited to join this special interest group and attend this face-to-face meeting at the annual conference.
SESSION SUMMARIES
PRE-CONFERENCE SESSIONS:

BMT 101A
WEDNESDAY, JUNE 5, 2019 | 10:30AM-4:00PM

BOW VALLEY
SESSION LEARNING OBJECTIVES:
1. Summarize topics in the field of hematopoietic stem cell transplant and cellular therapy
2. Identify updates in cellular therapies and stem cell biology as it relates to stem cell transplantation
3. Identify strategies for managing and avoiding complications of transplant

CONUNDRUM: HOW DO YOU DECIDE WHETHER A PATIENT IS ELIGIBLE FOR TRANSPLANT?
Andrew Daly, MD, FRCPC
We will review the factors that go into making a decision about transplant eligibility. Specific issues we will look at will be the use of scales and scoring systems, and how patient factors like age, obesity and general fitness affect the outcome of transplant. We will also discuss how the patient’s support system and other psycho-social factors affect transplant outcomes.

LEARNING OBJECTIVES:
1. Explain the uses and misuses of the HCT-CI.
2. Outline an approach to the evaluation of the older transplant candidate.
3. Describe how to manage an obese patient undergoing stem cell transplantation.
4. Describe how to assess co-morbid medical conditions and psycho-social factors in the stem cell transplant candidate.

LONG TERM FOLLOW UP FOR ALLOGENEIC STEM CELL TRANSPLANT SURVIVORS
Jeffrey Lipton, PhD, MD, FRCPC
I intend to review potential issues in the long term follow up of patients that need to be followed. I will deal with the patient responsibility of appropriate and timely communication, compliance with therapy, and the reasons why follow up is best done in a transplant centre. The need to question the health care personnel doing the follow up about issues, the need to bring symptoms to their attention even if the patient does not feel them to be important or may be embarrassed by them will be emphasized. Returning to as normal as possible life style including work, school, interpersonal relationships and social and physical activities will be discussed.

LEARNING OBJECTIVES:
1. Learn to be open about potential issues
2. Follow up with “routine” investigations and therapies
3. Remember that surviving a transplant does not make you immortal
4. Overcome chronic problems and live the best life that is possible

INVASIVE FUNGAL INFECTIONS AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION
Simon Dufresne, MD
This presentation will cover epidemiology, diagnosis, treatment and preventive strategies of major invasive fungal infections occurring after hematopoietic: invasive candidosis, invasive aspergillosis, Pneumocystis pneumonia, mucormycosis and endemic mycoses.

LEARNING OBJECTIVES:
1. Review the epidemiology and clinical presentation of major invasive fungal infections after hematopoietic stem cell transplantation.
2. Discuss preventive strategies for IFI after HSCT.
3. Outline current diagnostics and therapeutics for IFI.
AN INTRODUCTION TO DIAGNOSING AND GRADING CHRONIC GVHD
Kareem Jamani, MD, FRCPC
The presentation will review basic aspects of diagnosing chronic GVHD, differentiating acute and chronic GVHD and the grading of chronic GVHD by NIH consensus criteria.

LEARNING OBJECTIVES:
1. Discuss the diagnostic manifestations of cGVHD
2. Apply the NIH consensus criteria for grading of chronic GVHD

PRACTICAL ISSUES WITH CAR-T
Joerg Krueger, MD
Chimeric antigen receptor T cell therapy (CAR-T) has shown encouraging results in patients with refractory and relapsed acute lymphoblastic leukemia and B-cell lymphoma. In 2017 two CAR-T cell therapies were approved by the FDA and two commercial CAR-T cell products have recently been approved by Health Canada. CAR-T cell therapies differ significantly from conventional chemotherapy regimens and require a unique setup within clinical programs. Aim of the presentation is to review the rationale, clinical evidence and CAR-T cell specific side effects with a special focus on practical treatment aspects and difficult decision points during the treatment course.

LEARNING OBJECTIVES
1. Indications and Outcomes of CD19 CAR T-cell therapy in children with Acute Lymphoblastic Leukemia
2. Recognize and manage side effects and complications of CD19 CAR T-cell therapy
3. Management of difficult decision points during CAR T-cell therapy.

BMT 101B
WEDNESDAY, JUNE 5, 2019 | 10:30AM-4:00PM
EAU CLAIRE NORTH

LONG TERM FOLLOW UP FOR ALLOGENEIC STEM CELL TRANSPLANT SURVIVORS
Jeffrey Lipton, PhD, MD, FRCPC
I intend to review potential issues in the long term follow up of patients that need to be followed. I will deal with the patient responsibility of appropriate and timely communication, compliance with therapy, and the reasons why follow up is best done in a transplant centre. The need to question the health care personnel doing the follow up about issues, the need to bring symptoms to their attention even if the patient does not feel them to be important or may be embarrassed by them will be emphasized. Returning to as normal as possible life style including work, school, interpersonal relationships and social and physical activities will be discussed.

LEARNING OBJECTIVES:
1. Learn to be open about potential issues
2. Follow up with “routine” investigations and therapies
3. Remember that surviving a transplant does not make you immortal
4. Overcome chronic problems and live the best life that is possible

AN INTRODUCTION TO DIAGNOSING AND GRADING CHRONIC GVHD
Kareem Jamani, MD, FRCPC
The presentation will review basic aspects of diagnosing chronic GVHD, differentiating acute and chronic GVHD and the grading of chronic GVHD by NIH consensus criteria.

LEARNING OBJECTIVES:
1. Discuss the diagnostic manifestations of cGVHD
2. Apply the NIH consensus criteria for grading of chronic GVHD
CANNABIS: A USEFUL HIGH OR USELESS HYPE?

Dean England, BSc Pharm

Introductory review of the endocannabinoid system (CB1 and CB2 receptors) and how THC and CBD interact with this system.

Review the proposed therapeutic uses of THC and CBD.

Discuss trial that evaluates CBD use for post transplant immune suppression.

Discuss Toward Optimizing Practice recommendations for medicinal cannabis use.

Discuss potential for drug-drug interactions with cannabis.

Discuss the complexities of cannabis and the factors which hinder the ability to make informed recommendations for its use.

LEARNING OBJECTIVES:
1. Understand how and why cannabis has effects in the human body.
2. Be aware of the limited indications for medicinal cannabis use.
3. Be aware of the risks associated with cannabis use.
4. Understand the complexity of cannabis.
5. Understand why it is challenging to recommend cannabis use at this time.

SEXUALITY AFTER TRANSPLANT

Sara Beattie, PhD, R. Psych & Lauren Walker, PhD, R. Psych

Cancer treatment, including chemotherapy, radiation, and HCT can often cause sexual health implications. This may include lack of sexual desire, difficulties with arousal, sexual pain, changes in body image and may impact relationships. This presentation will review common treatment approaches for sexual concerns. We will briefly introduce strategies to patients including how to discuss this with their healthcare team to learn more about the options available to them.

LEARNING OBJECTIVES:
1. Review of impact of cancer treatments on sexual function and sexual relationships.
2. Review of common treatment approaches for sexual concerns.
3. Suggestions for how to modify sexual practices to increase success.

CONFERENCE SESSIONS:

SESSION 1
THURSDAY, JUNE 6, 2019 | 9:00AM-12:00PM

BRITANNIA & BELAIRE

SESSION LEARNING OBJECTIVES:
1. Summarize updates in late-breaking and cell therapy.
2. Discuss the implementation of CAR-T cell therapy in BMT centres across Canada.
3. Analyze the evolving fields of hematopoietic stem cell transplant and cellular therapy, including recent new indications and therapies post-transplant.

ENHANCING THE SAFETY AND EFFICACY OF GENETICALLY ENGINEERED T-CELLS IN CANCER THERAPY

Stanley Riddell, MD

The ability to harness a patient’s immune system to target malignant cells is now transforming the treatment of many cancers, including hematologic malignancies. The most notable advances in cellular immunotherapy have been fueled by an improved understanding of immune cells and their functions, and the ability to genetically modify cells with natural and synthetic receptors that redirect effector cell specificity. Therapies that were in the not too distant past, viewed as too complex to be commercially viable have rapidly emerged from the ivory towers of academia into the caverns of the pharmaceutical industry - a necessary step to ensure broad accessibility for patients. In phase 1 and 2 clinical trials in advanced refractory hematologic malignancies, these new cellular medicines have improved patient outcomes and are now FDA approved therapeutics. The results of clinical trials have however identified critical questions that must be addressed to realize fully the therapeutic potential of this disruptive approach. Focusing on chimeric antigen receptor (CAR) modified T cells I will discuss current gaps in scientific understanding, and approaches to optimize the therapeutic product, and overcome primary and adaptive resistance mechanisms. A key issue for our field is how academic centers can address these issues, systematically improve efficacy, reduce toxicities and cost, and when appropriate advance cell therapies to settings where they
ENSURING THE CELLULAR THERAPIES WE USE ARE SAFE AND EFFECTIVE: A BRIEF GUIDE TO REGULATIONS AND STANDARDS
Nicole Prokopishyn, PhD
Regulatory and standards adherence is essential to ensuring the manufacturing and delivery of adoptive cellular therapies, such as CAR-T cells, is performed safely, consistently, and effectively. Regulations and standards, such as good manufacturing practices (GMP) are in place to provide guidance around best practice during the complex manufacturing of these cellular products. As well, due to the clinical ramifications of some of these therapies, such as cytokine release syndrome (CRS), standards regarding protocols and training are paramount to minimizing the extent of adverse events. This presentation will review the current regulatory and accreditation landscape pertaining to cellular therapies in Canada and how to navigate this emerging field.

LEARNING OBJECTIVES:
1. Provide an overview of the current regulations and standards governing cellular and adoptive therapies.
2. Provide an understanding of the critical role quality assurance, staff training, and standardization plays in the success of these therapies.

THE CART BEFORE THE HORSE: A SINGLE SITE EXPERIENCE WITH DEVELOPING A COMMERCIALIZATION SITE
Amrita D. Naipaul, MSN, MBA, PCCNP, BScN
A case study of a single site experience will be presented on the development as a Commercial Site for CAR-T therapy in Canada. The journey from Health Canada approval of tisagenlecleucel (Kymriah) with the process to achieve site commercialization will be utilized exploring the media, legal and business operational considerations.

LEARNING OBJECTIVES:
1. Synthesize the processes for expanding a clinical program at a local site within the broader healthcare system.
2. Develop a business case model for novel and highly expensive emerging therapies.
3. Analyze lessons learned and challenges for leading and implementation of a commercial track for CAR-T-therapy.

IMPLEMENTATION OF CAR-T: PANEL
Jean-Sebastien Delisle, MD, FRCP, PhD
The presentation will be a panel discussion about the challenges of implementing CAR-T cells in clinical programs. The emphasis will be on the role the hematopoietic cell transplantation clinicians, allied health professionals and laboratory personnel will play to integrate this transformative approach into day-to-day practice.

LEARNING OBJECTIVES:
1. Identify the challenges of a clinical CAR-T-cell program from several angles: Organisational Clinical Laboratory
THE ANTIGEN LANDSCAPE OF ACUTE MYELOID LEUKEMIA

Claude Perreault, MD, FCAHS

Rapid progress in the field and lack of a standardized nomenclature commonly lead to some confusion in the classification of target antigens for T-cell based cancer immunotherapy. In the case of AML, two broad classes of antigens can be considered: minor histocompatibility antigens (MiHAs) and tumor antigens. MiHAs are MHC-associated peptides (MAPs) coded by genomic regions bearing germline polymorphisms. In contrast to tumor antigens, MiHAs can be recognized only by allogeneic T cells, not by autologous T cells.

Tumor-associated antigens (TAAs) are MHC-associated peptides (MAPs) that show superior abundance on tumor cells but are nonetheless present on normal cells and therefore may induce central immune tolerance. Tumor-specific antigens (TSAs) are MAPs found only on cancer cells in adult organisms; they do not induce self-tolerance. The first discovered TSAs derived from mutations (mTSAs) in the exome, typically single-nucleotide variants. mTSAs have two drawbacks: they are rare and are usually unique to a given tumor. We recently reported that in primary human leukemia and solid tumors, most TSAs derived from non-exonic and non-mutated genomic sequences. These aberrantly expressed TSAs (aeTSAs) resulted from epigenetic changes causing expression of genomic sequences that are normally repressed in somatic cells (e.g., endogenous retroelements). At face value, aeTSAs present two advantages over mTSAs: they are more numerous and some are shared by many tumors. I will discuss the advantages and limitations of the various types of antigen targets, and how they might contribute to the treatment of AML.

LEARNING OBJECTIVES:
1. A novel classification of target antigens for T-cell based immunotherapy of cancer
2. How the following therapeutic modalities can contribute to T-cell based immunotherapy of AML: adoptive cell therapy, immune checkpoint inhibitors, bispecific biologics, and vaccines.

TOWARD THE CURE ADULT ALL IN THE NEAR FUTURE

Hagop Kantarjian, MD

The presentation will update the biology of ALL and discuss new therapeutic approaches in Ph-positive ALL, and new combinations of antibodies targeting CD19 and CD22 with chemotherapy.

SESSION 2B: LABORATORY - TECHNOLOGISTS AND TECHNOLOGY – YOU CAN’T HAVE ONE WITHOUT THE OTHER!

THURSDAY, JUNE 6, 2019 | 2:00PM-5:00PM

BOW VALLEY

SESSION LEARNING OBJECTIVES:
1. Explain novel cell and immunotherapy product processing from a laboratory perspective
2. Identify strategies for increasing efficiency and quality assurance with electronic records
3. Explore what is currently available as potency tests for stem cells, and the associated challenges

NOVEL CELL & IMMUNOTHERAPY PRODUCT PROCESSING

Daniel Weber, Annegret Taubner, PhD, Normand Pilon

This session will focus on techniques for the manipulation of clinically relevant starting material for the creation of immunocompetent grafts, donor lymphocyte infusions, and adoptive cell therapy products.

We’ll highlight the utilization of automation and the advantages a closed system provides to perform the complex tasks needed to create these products in a GTP environment. We’ll also provide an opportunity to discuss implementation challenges and solutions faced when furthering patient access to cellular therapies at your institution.

LEARNING OBJECTIVES:
1. Discover options for creating an immunocompetent graft and their potential clinical benefit.
2. Understand options for and creation of adoptive cellular therapy products in a GTP environment.
ELECTRONIC RECORDS – ADVANCING QA ANALYSIS FOR TRANSPLANT

April Hillman, BSc, ADipHL, MLT

All cellular therapy products (CTPs) used for transplant by the Alberta Blood and Marrow Transplant Program in Calgary are received by the Cellular Therapy Laboratory prior to storage or transplant. As such, the laboratory uniquely has available critical information on every CTP transplanted, including transplant outcome. In 2014 an electronic record database was launched allowing for efficient and augmented data collection. This data repository has allowed for the creation of several reports for quality assurance that are generated quickly through Crystal Reports. With the capability to efficiently extract data we have been able to expand our quality assurance analysis on the CTPs and on program quality markers with minimal workload impact. These include: cryopreservation process, sterility, adverse infusion reactions, non-conforming CTPs, engraftment, and apheresis collection efficiency.

LEARNING OBJECTIVES:
1. How electronic records can be utilized for CTP quality assurance
2. How electronic records can be utilized for transplant program quality assurance
3. How data collection and analysis by the laboratory can aid the transplant program

STEM CELLS POTENCY ASSESSMENT USING A VALIDATED NOVEL RAPID FLOW CYTOMETRY ASSAY

Patrick Trépanier, PhD, MBA

According to NetCord FACT Standards, cord blood banks have to determine the potency of cord blood units (CBUs) on a representative sample of the cryopreserved product before release to a transplant center. Héma-Québec cord blood bank measure potency using the gold standard colony-forming unit method (CFU). This method requires at least 7 to 14 days for the results to be reported to the clinician or registry. While the CD34 and CD45 enumeration and viability determined by flow cytometry can be available within hours, the significant delay for obtaining CFU results can be of concern for urgent medical decisions and may not serve the patient’s best interest. The need for a quick, accurate, sensitive and extensively validated assay to determine stem cell products potency for CBUs is highlighted and addressed in this work.

A 24h flow cytometry method to assess the response of CD34+ cells to interleukin-3 (IL-3) was developed by our research lab in order to address the delay and sensitivity problem (Simard et al. 2019, Transfusion, in press). The flow cytometry assay measure the proportion of CD34+CD45Lo cells positive to STAT5 phosphorylation after IL-3 stimulation. The final result can be obtained within 24h.

The IL-3 protocol was shown to be a better potency predictor than using CD34 and CD45 viability alone. Since the method has proven to be working well in our study, an extensive method validation is ongoing in order to integrate it as a standard operating procedure. We also initiated a study for the IL-3 protocol using 20 samples of autologous peripheral-blood stem cells, as these products turnaround time between collection and infusion are frequently under 14 days. We are looking forward to collecting and sharing more data from this validated method with CBUs and eventually with autologous PBSCs.

LEARNING OBJECTIVES:
1. Explore what is currently available as potency tests for stem cells, and the associated challenges
2. Learn about a modern and quick alternative
3. See how it has been rigorously validated

SESSION 2C & 2D: ALLIED HEALTH

THURSDAY, JUNE 6, 2019 | 2:00PM-3:00PM

ONE PERCENT IS NOT ZERO PERCENT: A SURVIVOR STORY

Geoff Eaton, Founder, Young Adult Cancer Canada (YACC)

Statistics are sometimes as accurate reflection of the past they are not at all necessarily an accurate predictor of the future.

Originally diagnosed with Leukemia in 1998 Geoff received several rounds of chemotherapy, full body radiation, a bone marrow transplant from his Dad and later spent a month in Intensive Care on life support. After rebuilding physically and emotionally from his ICU experience Geoff turned his cancer challenge into opportunity with the establishment of Young Adult Cancer Canada (YACC).

As YACC celebrated its first anniversary of operation Geoff’s leukemia
relapsed forcing an adjustment in personal and professional plans. After additional chemotherapy and a stem cell transplant, again from his Dad, Geoff resumed limited work activities.

Since those early years YACC’s vision has evolved considerably, as has the program offering for young adults dealing with cancer. Over 20 years of life as a cancer survivor and advocate have taught Geoff some incredibly valuable lessons about life and facing life-threatening challenges. You will hear stories shedding light on the unique issues young adults with cancer confront and how health professionals hinder and help patients like Geoff who are forced to face the end of their life just as it’s starting.

LEARNING OBJECTIVES:
1. Understand how and why cancer is different for young adults.
2. Understand how health professionals can enhance the experience for young adults living with, through and beyond cancer.
3. Gain insight into the practices and behaviours that hinder a patient’s experience during and after treatment.

SESSION 2C: ALLIED HEALTH
THURSDAY, JUNE 6, 2019 | 3:30PM-5:00PM
EAU CLAIRE NORTH

SESSION LEARNING OBJECTIVES:
1. Discuss pediatric specific complications from an allied health perspective
2. Identify strategies to assist with transitioning patients from pediatric to adult care
3. Discuss the value of survivorship clinics for screening and monitoring post BMT
4. Summarize cardiac complications post-hematopoietic stem cell transplant

PEDIATRIC SPECIFIC COMPLICATIONS AND TRANSITION INTO ADULT CARE
Catherine Leyshon, BSP, Jennifer Jupp, BScPharm, BCOP, Ellen Kennedy, BScN, Matthew Clancy, Anne Tremblay, RNBScN

BMT survivors are susceptible to a number of complications and late effects. The pediatric population comprise of an increasing proportion of these survivors who face the additional challenge of transitioning to adult care. Long term follow up clinics have been established to improve screening, monitoring and preventive care. A panel discussion on this unique population will be comprised of nurses; pharmacists and a BMT survivor from the Pediatric and Adult BMT long term follow up programs in Alberta.

LEARNING OBJECTIVES:
1. Discuss common complications that are seen in the pediatric population that can persist into adulthood
2. Explore the challenges in practice with transitioning patients from pediatric to adult care
3. Discuss the value of survivorship clinics for screening and monitoring post BMT

A MATTER OF THE HEART: LATE CARDIOVASCULAR TOXICITY AFTER HEMATOPOIETIC CELL TRANSPLANT
Kareem Jamani, MD, FRCPC

The presentation will review the often overlooked late cardiovascular toxicities of hematopoietic cell transplant, including epidemiology, risk factors and management.

LEARNING OBJECTIVES:
1. Discuss the incidence of, risk factors for and clinical manifestations of late cardiovascular toxicity after hematopoietic cell transplant.
2. Discuss recommendations for screening, risk assessment and risk reduction.
SESSION 2D: ALLIED HEALTH
THURSDAY, JUNE 6, 2019 | 3:30PM-5:00PM
EAU CLAIRE SOUTH

SESSION LEARNING OBJECTIVES:
1. Describe the latest evidence for fertility protection and/or preservation in women undergoing transplant
2. Examine cannabis use with hematopoietic stem cell transplant
3. Explain survivorship from a hematopoietic stem cell transplant patient perspective

OPPORTUNITIES LOST: FERTILITY PRESENTATION FOR INDIVIDUALS PRIOR TO TRANSPLANT

Anne Katz, PhD, RN, FAAN

This presentation will present the latest evidence on strategies to protect and/or preserve fertility in individuals with hematologic cancers undergoing transplant. There will also be a focus on how to have a sensitive conversation with patients under significant time pressure.

LEARNING OBJECTIVES:
1. Understand the latest evidence for fertility preservation in men undergoing transplant
2. Understand the latest evidence for fertility protection and/or preservation in women undergoing transplant
3. Describe the key concepts in talking about a sensitive topic with patients

MEDICAL CANNABIS IN ONCOLOGY

Reanne Booker, RN, BScN, MN, NP and Dean England, BSc. Pharm.

Medical cannabis has been utilized for an array of different medical conditions and has been available in Canada since 2001. In spite of this, there is little research to guide clinicians on how cannabis use may influence the health and well-being of patients during and following hematopoietic stem cell transplantation.

In order to provide comprehensive, quality care to patients with cancer, it is imperative that clinicians become educated on cannabis. This presentation will provide an overview of cannabis use in the context of hematopoietic stem cell transplantation.

LEARNING OBJECTIVES:
1. Review what cannabis is and how it works in the body
2. Discuss potential risks and benefits of cannabis use with an emphasis on use in patients undergoing hematopoietic stem cell transplantation
3. Review implications for nurses and allied health care providers including challenges and opportunities; discussion will be invited.

SESSION 3: FRED SAUNDERS LECTURESHIP
FRIDAY, JUNE 7, 2019 | 9:00AM-10:00AM
BRITANNIA & BELAIRE

SESSION LEARNING OBJECTIVES:
1. Describe the leading causes of late mortality in HCT survivors.
2. Explain the risk factors for the development of cardio-metabolic conditions after HCT and what should be done for screening in long-term follow-up.
3. Describe risk factors for subsequent malignancy risk in children after HCT and how patients should be monitored in long-term follow-up.

LATE EFFECTS IN PEDIATRIC SURVIVORS AFTER HEMATOPOIETIC CELL TRANSPLANTATION: PREPARING KIDS FOR LONG TERM SURVIVAL THROUGH ADULTHOOD

K. Scott Baker, MD, MS

This presentation will review the major causes of late mortality in pediatric HCT survivors including risk factors, screening and prevention. Topics to be reviewed will include cardio-metabolic disease, subsequent malignancies, and other issues that impact the long-term health and well-being of our pediatric HCT survivors.

LEARNING OBJECTIVES:
1. Describe the leading causes of late mortality in HCT survivors.
2. Understand the risk factors for the development of cardio-metabolic conditions after HCT and what should be done for screening in long-term follow-up.
3. Describe risk factors for subsequent malignancy risk in children after HCT and how patients should be monitored in long-term follow-up.
SESSION 4: MANAGING AND PREVENTING ADVERSE PSYCHOSOCIAL COMPLICATIONS

FRIDAY, JUNE 7, 2019 | 1:15PM-3:15PM

BRITANNIA & BELAIRE

SESSION LEARNING OBJECTIVES:

1. Identify strategies for managing and preventing adverse psychosocial complications
2. Summarize strategies for early integration of palliative care
3. Understand sexual health post-hematopoietic stem cell transplant

INTEGRATION OF PALLIATIVE CARE INTO THE CARE OF PATIENTS WITH HEMATOLOGIC MALIGNANCIES

Areej El-Jawahri, MD

This presentation will focus on 1) describing the literature on the unmet palliative care needs in patients with hematologic malignancies and those undergoing HCT; 2) discuss barriers to palliative care integration and optimal end of life care in this population; and 3) review successful palliative care integration strategies to improve the quality of life and care for patients with hematologic malignancies and their family caregivers.

LEARNING OBJECTIVES:

1. Understand the unmet palliative care needs in patients with hematologic malignancies and those undergoing HCT
2. Review barriers to palliative care integration and optimal end of life care for patients with hematologic malignancies
3. Review successful palliative care integration strategies for patients with hematologic malignancies and those undergoing HCT

MOVING BEYOND TOXICITY: OPTIMIZING SEXUAL HEALTH AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION

Reanne Booker, MN, NP

The impact of hematopoietic stem cell transplantation on sexuality has been described in the literature. An array of possible adverse effects, owing to either the underlying hematologic condition and/or treatment may occur including: diminished libido, altered body image, relationship changes, dyspareunia, erectile and ejaculatory changes for men and vulvovaginal changes for women. Alterations in sexuality after hematopoietic stem cell transplantation are extremely common, although often underreported by patients and subsequently, under-dressed. Such changes can be profoundly distressing to patients and may persist for many years following the completion of treatment. In this presentation, an overview of the potential changes in sexuality that may arise following a hematopoietic stem cell transplantation will be provided. Strategies to assess changes in sexuality and possible therapeutic options (pharmacological and non-pharmacological) will be presented. A summary of the resources available for clinicians as well as for patients and their partners will be provided. While changes in sexuality after a hematopoietic stem cell transplantation may be common, transplant clinicians can help patients to prevent and manage such changes and ultimately, optimize their sexual health and well-being.

LEARNING OBJECTIVES:

1. To review the potential impact of hematopoietic stem cell transplantation on sexuality
2. To discuss possible strategies to prevent and/or manage changes in sexual function that arise after transplant
3. To discuss resources available to clinicians and patients to help optimize sexual health and well-being
SESSION 5: CONTROVERSIES IN AUTOLOGOUS TRANSPLANTS: AN ADULT & PEDIATRIC PANEL DISCUSSION
SATURDAY, JUNE 8, 2019 | 9:00AM-10:30AM
BRITANNIA & BELAIRE

SESSION LEARNING OBJECTIVES:
1. Summarize the evolving field of autologous and allogeneic transplant
2. Explain the controversies in autologous transplant from both an adult and pediatric perspective
3. Identify new strategies for managing autoimmune disease

AUTOLOGOUS TRANSPLANT FOR MULTIPLE MYELOMA: YES OR NO?
Christopher Venner, MD, BSc, FRCPC

Autologous stem cell transplant has remained the standard of care for eligible patient with multiple myeloma for many decades. This modality leads to deep and durable responses helping to prolong disease control and ultimately a patients overall survival. That said, the advent of novel targeted and potent anti-plasma cell therapies continues to challenge the role of high dose therapy in this disease. Moreover, beyond the question of whether transplant can be replaced we also face more nuanced questions such as optimization of novel agent-based therapies at various time points in the treatment (improving induction or considering the addition of consolidation or maintenance) or adjusting the timing of the high dose therapy (frontline versus reserving for relapsed disease). Even more challenging is considering the role of new immune based therapies as such treatments are moved earlier in the treatment paradigm. The aim of this presentation is to describe the evolving data that will inform these discussion.

LEARNING OBJECTIVES:
1. Describe the evolving data establishing the current role of transplant in myeloma
2. Discuss current controversies around optimal therapy of transplant eligible patients
3. Describe the anticipated therapeutic landscape incorporating new treatments into the treatment paradigm

CAR-T CELL THERAPY OF PEDIATRIC MALIGNANCIES: PROGRESS AND CHALLENGES
Julie Park, MD

The success of chimeric antigen receptor (CAR) T cell immunotherapy for treatment of CD19 expressing acute lymphocytic leukemia (ALL) provides a paradigm for using cellular immunotherapy for the treatment of a wide range of pediatric cancers. However, barriers to success remain, even within the treatment of ALL. Approximately half of those children who achieve remission of ALL following CAR-T cell therapy will ultimately experience subsequent recurrence, primarily due to antigen escape or lack of CAR-T cell persistence. Novel approaches are currently being investigated to avoid antigen escape through multi-targeted approaches. Additional clinical trials are underway to explore ability of a vaccination strategy using CD19 expressing T-antigen presenting cells (APCs) to enhance CAR-T cell persistence and to explore use of a fully human CD19 CAR to avoid rejection. Additional barriers remain for the development of CAR-T cell therapy for solid tumors and brain tumors, including the rarity of entirely tumor-specific antigens, impaired CAR-T cell trafficking, heterogeneity of solid tumors and potential for antigen escape and impaired T cell function due to the immunosuppressive environment of solid tumors. None the less, several targets of pediatric solid tumor and brain tumors have been identified allowing for pre-clinical optimization of CARs and the development of early phase clinical trials for neuroblastoma, other solid tumors and brain tumors. Furthermore, trials are investigating loco-regional delivery of CAR-T cell for brain tumors to minimize risks for “on-target/off-tumor” toxicity. Preliminary results of these trials including signs of immunologic response and observed reversible toxicity will be presented. Ongoing research to further optimize CAR-T cell therapy will be discussed.

LEARNING OBJECTIVES:
1. Understand the successes and barriers of CD 19 CAR-T cell immunotherapy for treatment of ALL.
2. Understand the unique barriers of applying CAR-T cell therapy to the treatment of solid tumor and brain tumors.
3. Understand current CAR-T cell approaches for treatment of solid tumor and brain tumors occurring in children and young adults; including immunologic responses and observed toxicities. 4. Understand the general approaches currently underway to address barriers to success for CAR therapy in the treatment of solid tumors and brain tumors.
AUTOLOGOUS TRANSPLANTS FOR PEDIATRIC AUTOIMMUNE DISEASE

Jacob Rozmus, MD, PhD, FRCPC

This presentation will focus on the immune mechanisms behind autologous HSCT in pediatric autoimmune diseases and highlight potential novel interventions that could improve its efficacy.

LEARNING OBJECTIVES:
1. Summarize the experience of using autologous HSCT in treating pediatric autoimmune diseases.
2. Review the current knowledge about the immune mechanisms of autologous HSCT for pediatric autoimmune diseases.
3. Identify new approaches to improve the long-term outcome of autologous HSCT in pediatric autoimmune diseases.

SESSION 6: DEBATE: CAR-T CELLS VS. ALLOGENEIC TRANSPLANT FOR PATIENTS WITH RELAPSED ALL

SESSION LEARNING OBJECTIVES:
1. Critique the different approaches for managing patients with relapsed Acute Lymphoblastic Leukemia.
2. Describe CAR-T cell therapy for relapsed Acute Lymphoblastic Leukemia.
3. Summarize allogeneic transplant for relapsed Acute Lymphoblastic Leukemia.

CAR-T CELLS RELAPSED ACUTE LYMPHOBLASTIC LEUKEMIA

Matthew Seftel, MD MPH FRCPC FRCP

The role of allogeneic blood and marrow transplant (BMT) in ALL remains controversial, especially in the front-line setting. As fewer patients receive BMT for ALL in CR1, the place of BMT in relapse will inevitably become more prominent. However, there have been breakthroughs in the field of cellular therapy (in particular, CAR-T) that are rapidly displacing the role of BMT in relapsed ALL. This talk will summarize the merits of CAR-T therapy for relapsed ALL.

ALLOGENEIC BONE MARROW TRANSPLANTATION FOR RELAPSED ACUTE LYMPHOBLASTIC LEUKEMIA

Irwin Walker, MD

The prognosis for adults presenting with newly diagnosed acute lymphoblastic leukemia has improved in recent years, but the outlook for those who then relapse remains poor, survival being rare when treatment for relapsed disease is based on chemotherapy alone. Bone marrow transplantation is therefore routinely recommended for those who enter a second remission; survival is often prolonged and cure remains a possibility.

LEARNING OBJECTIVES:
1. Describe the expected outcomes of bone marrow transplantation for relapsed acute lymphoblastic leukemia in adults.
2. Contrast the outcomes of bone marrow transplantation with those obtained from CAR-T cell therapy.
# ORAL ABSTRACT INDEX

**FRIDAY, JUNE 7, 2019 | 3:30PM – 5:00PM | BRITANNIA & BELAIRE**

<table>
<thead>
<tr>
<th>#</th>
<th>TITLE</th>
<th>TOPIC</th>
<th>PRESENTING AUTHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CANADIAN PILOT CLINICAL TRIAL: LENTIVIRUS-MEDIATED GENE THERAPY FOR ADULT FABRY DISEASE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Ronan Foley</td>
</tr>
<tr>
<td>2</td>
<td>BEAM VERSUS SINGLE AGENT HIGH DOSE MELPHALAN CONDITIONING REGIMEN FOR AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT: A RETROSPECTIVE MATCHED ANALYSIS IN RELAPSED/REFRACTORY HODGKIN LYMPHOMA.</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Panayotis Kaloyannidis</td>
</tr>
<tr>
<td>3</td>
<td>CAREGIVER TOOLKIT FOR PATIENTS BEING CONSIDERED FOR ALLOGENEIC BLOOD AND MARROW TRANSPLANT</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Leeann Wilson</td>
</tr>
<tr>
<td>4</td>
<td>OVERCOMING THE CHALLENGES OF INTRODUCING A RADIONLABELED ANTIBODY-BASED THERAPY INTO THE HOSPITAL.</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Amanda Pecarskie</td>
</tr>
<tr>
<td>5</td>
<td>INTENSIVE MINIMAL RESIDUAL DISEASE MONITORING TO DRIVE EARLY INTERVENTION AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT FOR PEDIATRIC ACUTE LEUKEMIA</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Michel Duval</td>
</tr>
<tr>
<td>6</td>
<td>OUTCOME OF POST-TRANSPLANT CYCLOPHOSPHAMIDE COMBINED WITH ATG AS GVHD PROPHYLAXIS FOR ALLOGENEIC HCT IN HIGH RISK AML AND MDS</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Wael Alanazi</td>
</tr>
</tbody>
</table>

## 1. CANADIAN PILOT CLINICAL TRIAL: LENTIVIRUS-MEDIATED GENE THERAPY FOR ADULT FABRY DISEASE

Foley, R.¹, Khan A², Barber D³, Huang J³, Auray-Blais C³, Rupar T⁴, Prokopishyn N⁴, West M⁵, Keating A⁵, Fraser G⁵, Daly A⁵, Couban S⁵, Fowler D⁶, and Medin J⁷

¹Foothills, Calgary AB, ²PMH Toronto, ON, ³University of Sherbrooke Que, ⁴Western University, London ON, ⁵Dalhousie, Halifax NS, ⁶Juravinski Cancer Center, Hamilton, ON, ⁷NIH, Bethesda MA, ⁸Medical College of Wisconsin, Milwaukee WI, ⁹Juravinski Cancer Center, Hamilton, ON

**BACKGROUND:** Fabry disease is caused by a deficiency in the enzyme alpha-galactosidase A (a-gal A). Exogenous enzyme replacement therapy (ERT) is currently used to treat Fabry disease although the cost is high and biweekly infusions are required long-term. Study: We have launched a multi-center, pilot clinical trial in Canada using lentivirus-based gene transfer to treat adults with Fabry disease of the classical phenotype (clinicaltrials.gov#NCT02800070). The primary objectives are to determine feasibility and safety of this first-in-man procedure. In collaboration with established Canadian BMT centers, the protocol involves mobilization of hematopoietic stem/progenitor cells (HSPCs, CD34+ selected), ex vivo recombinant lentivirus-mediated gene transfer of a codon-optimized human a-gal A cDNA into those cells, and infusion of the transduced HSPCs into minimally ablated autologous recipients (Melphalan 100mg/m²).

**RESULTS:** The first Fabry patient received a single dose of vector-transduced cells in January 2017 (Calgary, ALB). Since then an additional four Fabry patients have been transplanted. With regards to safety - no unexpected serious adverse events have occurred in any Fabry patient to date. All manufactured gene modified stem cell grafts have achieved Health Canada pre-specified COA (certificate of analysis) specifications for purity, dose and potency. We now report interim results at 24 month post-infusion. We have tracked a-gal A activity in leukocytes and plasma, vector copy number in peripheral blood and bone marrow cells, antibody titers in plasma, and changes to enzyme substrates and catabolites in both plasma and urine. Results show durable engraftment and persistence of
vector-transduced HSPCs that are functionally enabled to produce normal-range levels of serum α-gal A. As opposed to variable AUC when exogenous enzyme is administered q2weekly, gene-based enzyme is provided continuously.

CONCLUSION: This pilot protocol appears to be feasible and safe; however, application to other patients and long-term clinical efficacy including effects on target tissues (brain, heart, and kidney) require further follow up.

2. BEAM VERSUS SINGLE AGENT HIGH DOSE MELPHALAN CONDITIONING REGIMEN FOR AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT: A RETROSPECTIVE MATCHED ANALYSIS IN RELAPSED/REFRACTORY HODGKIN LYMPHOMA.

Panayotis Kaloyannidis1, Muhamad Rauf2, Hani Al Hashmi1, Salman Harbi1, Solaif Kanfar1, Irfan Maghfoor1, Eshrak Al Shaibani2, Nihad Mokhtar1, Mohamed Darweesh1, Enas Mutahar1, Ioannis Apostolidis1, Tusneem Elhassan1, Khalid Al Anezi1, Sayed Akhtar2

1King Fahad Specialist Hospital, Adult Hematology & Stem Cell Transplantation Department, Dammam, Saudi Arabia 2King Faisal Hospital and Research Center, Oncology Center Riyadh, Saudi Arabia

BACKGROUND: Though BEAM is the most popular preparative regimen, high dose Melphalan (HDM) has also been used as conditioning in autologous stem cell transplantation (ASCT) for lymphomas demonstrating promising results. Nevertheless, there are limited data and experience comparing BEAM vs HDM. Methods We conducted a retrospective study in two institutions, and evaluated the outcome of 112 patients (pts) who autografted the last decade, for relapsed/refractory Hodgkin Lymphoma. HDM received 28 pts and compared with a matched paired (1:3) group of 84 pts who conditioned with BEAM. The median age (30ys) and sex (M:F 1,7:1 vs 1,8:1) were similar with a matched paired (1:3) group of 84 pts who conditioned with BEAM. The median age (30ys) and sex (M:F 1,7:1 vs 1,8:1) were similar in two groups. Pts were matched for disease status: a) before salvage (late relapse/relapse/refractory disease 48:16) and b) pre ASCT [complete remission (CR), 39:13 and partial remission (PR), 45:15]. BEAM regimen was given in the standard doses over 6 days, while HDM (200mg/m2) was given in a single infusion. Anti-bacterial, -fungal and -viral prophylaxis were given routinely while GCSF (5mcg/kg) was administered from +1 day (BEAM group) and from +5 day (HDM group). The T-test and Kaplan-Meier method were used for the statistical analysis.

RESULTS: All pts engrafted successfully; for both groups the median day for neutrophils >1000/mm3 was +11 days while a faster platelets recovery (>20000/mm3) was noticed for HDM group (13 vs 22 days, p<.001). The median follow-up was 2,5 years. Sixty four pts are alive from the BEAM-group (disease free: 49), and 23 from the HDM-group (disease free: 20). The 5-years overall and progression free survival were superior for the HDM-group, though not statistically significant (80% vs 65% and 70% vs 52%, p=ns). Interestingly, the HDM regimen was associated with better survival rates for any disease status at ASCT (CR or PR). The 100 days non relapse mortality was similar: 1/28 (3,5%) vs 2/84 (2,3%) for the HDM- and the BEAM-group respectively

CONCLUSION: Our results demonstrated that the HDM regimen, was equally safe, offering also comparable efficacy to the BEAM regimen. The less hospitalization days due to the shorter duration of chemotherapy and the faster platelets recovery, along with the shorter period of GCSF administration, may contribute to a better cost effectiveness for the HDM regimen. Prospective studies with large series of pts and long-term follow-up, and meticulous cost analysis, are warranted to define the role of HDM as preparative regimen for ASCT.

3. CAREGIVER TOOLKIT FOR PATIENTS BEING CONSIDERED FOR ALLOGENEIC BLOOD AND MARROW TRANSPLANT

Zoe Evans, BScN MN-NP Adult CON(C), Kelly Antes, MSW, RSW; Jennifer Bell, MA, PhD; Zoe Evans, BScN, MN-NP Adult, CON(C); Ali Henderson, MSW, RSW; Rajat Kumar, MD, MSc(LSE), FRCP, FRCPC; Kim Maki, RN, BScN, CON(C); Leeann Wilson, R.N., BSc, BScN (Hon), CON(C); Auro Viswabandya MD, DM, FRCP

BACKGROUND: The term caregiver describes a person who provides physical and emotional care to someone but is not in a professional or vocational role. A caregiver may be a partner, parent, child, close friend or community member. Caregivers play an integral role in the care of a patient following Allogeneic Transplantation and are linked to adverse outcomes including survival. It is recommended that the treating team, as part of the treatment planning process, initiate the conversation about caregiver roles and responsibilities early in order to ensure patients have time to establish adequate support. The caregiver role can having varying levels of intensity, therefore, it is the responsibility of the medical team to educate patients and their identified caregiver regarding the level of support needed during
the different phases of transplantation. As well, a detailed agreement outlining the role and responsibilities of the caregiver should be reviewed by both the patient and their caregiver and signed if indicated.

**METHOD:** A multidisciplinary working group consisting of a Bioethicist, Leukemia Coordinator, Allogeneic BMT coordinator, Social Worker, Physician, and Nurse Practitioner was created. The goal of the working group was to review internal policies/practices around the caregiver role in the Malignant Hematology program at Princess Margaret. From there the team liaised with centers across the province and Canada to better understand other practices and recommendations. Gaps in our current process were identified which allowed for the creation of a Caregiver Tool Kit. The tool kit was designed to support staff, patients, families and friends to understand the caregiver role and responsibilities during the multiple phases of transplantation.

**RESULTS:** A Caregiver Tool Kit that includes a clear definition of the roles and responsibilities of a caregiver, guidelines to determine the most appropriate caregiver, patient education, Social Work support, and a caregiver agreement.

**EVALUATION:** Allogeneic Blood and Marrow Transplantation is a complex process that requires commitment of the patient, their caregiver(s), and staff. The initial evaluation of the implementation will be to investigate if there is improvement in staff understanding of the caregiver role and increase in staff confidence in discussing the caregiver role with patients and families. Long term outcome measures will be implemented to measure impact on patient care.

**4. OVERCOMING THE CHALLENGES OF INTRODUCING A RADIOLABELED ANTIBODY-BASED THERAPY INTO THE HOSPITAL**


**INTRODUCTION:** Radioimmunotherapy is increasingly being used to deliver higher doses of targeted radiation to treat cancer. Herein we describe, in detail, the steps taken to safely introduce a radiolabeled antibody, (131I) Apamistamab [Iomab-B], into the clinical space, in the context of a prospective, randomized, phase 3, multicenter clinical trial, treating refractory acute myeloid leukemia (NCT02665065). Statement of the main thesis Early and comprehensive logistical preparation is necessary to ensure smooth treatment of the patient and minimize radiation exposure to health care workers and other patients.

**SUMMARY:** Patients receiving this treatment are confined to a lead-lined room in the hospital for a period of time (average 5 days) in order to minimize radiation exposure to others. Nevertheless, their care can impact widely in the hospital. Therefore, treatment planning for these patients requires a multidisciplinary approach. Nursing, Nuclear Medicine, Radiation Safety, physicians, administration and other clinical areas are all part of the planning process, in addition to members from other centers who have the experience of integrating the agent into their clinical areas, as well as the manufacturer. Monthly meetings served to collectively review the progress and troubleshoot issues from within each stakeholder group. Initially, the infrastructure should be reviewed to ensure it is appropriate for such a therapeutic intervention. The planning centered, however, on preparing for the infusion and post-infusion issues. Education sessions were held for the nurses and support staff to familiarize the team with the protocol and how to limit radiation exposure to oneself. The room and the patient must be prepared the day before under the supervision of the radiation safety department. Patients are taught to take blood samples from their central line and to monitor their vital signs. Anticipating procedures which may occur post infusion is important, to minimize them or complete them prior to infusion, if possible. Finally, coordination between the nursing staff on the ward and the nuclear medicine department is crucial to ensure that the patient is appropriately premedicated prior to transporting the drug to the ward to minimize the severity of any infusion-related reactions.

**CONCLUSION:** Administration of radioimmunotherapy in the treatment of cancer is feasible with the proper education and preparation of hospital staff.
5. INTENSIVE MINIMAL RESIDUAL DISEASE MONITORING TO DRIVE EARLY INTERVENTION AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT FOR PEDIATRIC ACUTE LEUKEMIA

Thomas Pincez, Raoul Santiago, Henrique Bittencourt, Isabelle Louis, Pierre Teira, Johanne Richer, Sonia Cellot, Michel Duval

BACKGROUND: Relapse of acute leukemia (AL) remains the main cause of death after allogeneic stem cell transplantation (HSCT) in children. Minimal residual disease (MRD) allows to detect leukemia cells in the bone marrow at low level. The impact of post-HSCT MRD monitoring to detect early leukemia recurrence, to guide therapeutic intervention, and to prevent overt relapse is unknown. We report our experience of systematic MRD monitoring after pediatric HSCT.

METHOD: All patients who underwent HSCT from January 2012 to December 2017 for an AL had bone marrow MRD performed for 2 years (months 1, 2, 3, 5, 7, 9, 12, 15, 18, 21 and 24). MRD was assessed by flow-cytometry (FC) and, when a molecular alteration was present, by nested RT-PCR.

RESULTS: Seventy-one HSCT were performed for AL of myeloid (n=38), lymphoid (n=31) or mixed (n=2) lineage in 59 patients at a median (range) age of 6.5 (0.7-18.4) years. Nine cases did not engraft or had a refractory disease at month+1 evaluation. In all other cases (n=62) MRD was monitored using FC (n=58) and/or RT-PCR (n=34). Thirty-three cases had a MRD detection and/or an overt relapse (≥5% blasts). In 23/33 cases (70%), MRD was detected without simultaneous overt relapse. In the 10 others, an overt relapse occurred without prior MRD detection. Among the cases monitored with RT-PCR, only one relapse occurred without a prior MRD detection. The follow-up protocol was not respected in this particular case. On early MRD detection, 20/23 cases underwent therapeutic intervention, the most frequent being the discontinuation of immunosuppressive drugs (n=13), with subsequent undetectable MRD in 6. Other interventions included chemotherapy (n=8), donor lymphocyte infusion (n=6) and/or interferon A± interleukine 2 (n=3), leading to an undetectable MRD in 3 cases. Overall after first MRD detection, 9/23 (39%) cases never experienced a subsequent overt relapse.

CONCLUSION: Intensified MRD monitoring detected 70% of leukemia recurrences before overt relapse. Therapeutic intervention were taken in most of the cases and 39% never experienced overt leukemia relapse. More efficient immunotherapies may improve the impact of preventive interventions.

6. OUTCOME OF POST-TRANSPLANT CYCLOPHOSPHAMIDE COMBINED WITH ATG AS GVHD PROPHYLAXIS FOR ALLOGENEIC HCT IN HIGH RISK AML AND MDS

Wael Alanazi, Jeffrey H. Lipton, Dennis D. Kim, Auro Viswabandya, Santhosh Thyagu, Rajat Kumar, Wilson Lam, Arjun D. Law, Fotios V. Michelis

Hans Messner Allogeneic Transplant Program, Princess Margaret Cancer Centre, University Health Network, University of Toronto, Toronto, Canada

INTRODUCTION: Disease relapse in acute myeloid leukemia (AML) and myelodysplastic syndrome (MDS) remain major challenges. We recently introduced a combination of post-transplant cyclophosphamide (PTCy) and ATG (4.5 mg/kg) as graft-versus-host disease (GVHD) prophylaxis. The purpose of our study was to compare outcomes between PTCy/ATG and other GVHD prophylaxis regimens for high risk AML and MDS.

METHODS: We retrospectively investigated outcomes of 159 patients that underwent allogeneic HCT between January 2014 and July 2017 for high risk AML (75%) and MDS (25%). GVHD prophylaxis regimens were compared for overall survival (OS), cumulative incidence of relapse (CIR) and non-relapse mortality (NRM) in univariate and multivariable analysis. High risk AML was defined as all secondary AMLs, high risk cytogenetics (ELN criteria) and AML achieved more than CR1; high risk MDS was defined as high/very high risk WPSS score.

RESULTS: Median age of patients was 56 years. Donors were matched related (33%), matched unrelated (56%) and haploidentical in (11%). Graft source was peripheral blood stem cells in 99% of patients. Myeloablative conditioning was used in 34% of patients, reduced intensity regimens in 66% of patients. PTCy combined with ATG was used in 43% of patients; other GVHD prophylaxis regimens were used in 57% of patients. Median follow-up of survivors was 29 months. Univariate analysis demonstrated OS of the entire cohort at 2 years was 49% (95%CI 41-57%), CIR at 2 years was 22% (95%CI 16-29%) and NRM at 2 years was 32% (95%CI 25-39%). Concerning GVHD prophylaxis regimen, 2-year OS for PTCy/ATG versus others was 46% (95%CI 33-58%) versus 51% (95%CI 40-61%) (p=0.87), 2-year
CIR for PTCy/ATG versus other was 31% (95%CI 20-43%) versus 16% (95%CI 9-24%) (p=0.02) and 2-year NRM for PTCy versus other was 28% (95%CI 18-39%) versus 34% (95%CI 25-44%) (p=0.35) Multivariable analysis for OS and CIR confirmed that the GVHD prophylaxis regimen had no influence (p=0.19), (p=0.6) respectively compared to other GVHD prophylaxis, while age was predominant predictor of survival at HCT (HR 1.03, 95%CI 1.01-1.05, p=0.01) and (HR 3.05 for RIC, 95%CI 1.26-7.37, p=0.01) respectively. For NRM, the PTCy/ATG combination demonstrated no significant difference (p=0.12), age at HCT was the predominant predictor (HR=1.04, 95%CI 1.01-1.07, p=0.02).

CONCLUSIONS: On Multivariable analysis PTCy/ATG combination has demonstrated similar OS, CIR and NRM with other regimens.
<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Topic</th>
<th>Presenting Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>DOES PRE-TRANSPLANT BMI INFLUENCE COMPLICATIONS AND SURVIVAL IN PATIENTS WITH CHRONIC GRAFT VERSUS HOST DISEASE AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT (A-HSCT)?</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Nguyet Nguyen</td>
</tr>
<tr>
<td>P2</td>
<td>PUBLIC SOLICITATION &amp; THE CANADIAN MEDIA: TWO CASES, TWO DIFFERENT STORIES</td>
<td>Research: Basic/Translational</td>
<td>Alessandro Marcon</td>
</tr>
<tr>
<td>P3</td>
<td>POST-TRANSPLANT CYCLOPHOSPHAMIDE COMBINED WITH ATG FOR GVHD PROPHYLAXIS IMPROVES SURVIVAL AND LOWERS NON-RELAPSE MORTALITY IN OLDER PATIENTS UNDERGOING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Ivan Pasic</td>
</tr>
<tr>
<td>P4</td>
<td>EFFECTIVENESS MONITORING OUTCOMES: ONE YEAR POST-IMPLEMENTATION OF AN AUTOMATED CLOSED VOLUME REDUCTION SYSTEM IN PROCESSING OF HEMATOPOIETIC PROGENITOR CELLS FOR AUTOLOGOUS TRANSPLANT</td>
<td>Clinical: Laboratory/Quality</td>
<td>Jelena Holovati</td>
</tr>
<tr>
<td>P5</td>
<td>DEVELOPMENT AND IMPLEMENTATION OF PSYCHOSOCIAL ASSESSMENT AND PSYCHOSOCIAL CARE FOR PRE-ALLOGENEIC BMT PATIENTS AT PRINCESS MARGARET CANCER CENTRE</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Leeann Wilson</td>
</tr>
<tr>
<td>P6</td>
<td>FLOW CYTOMETRY- AND SYSMEX HEMATOLOGY ANALYZER-BASED DETERMINATIONS OF CELL COUNTS IN BONE MARROW- AND APHERESIS-HARVESTED HEMATOPOIETIC STEM CELL TRANSPLANT PRODUCTS DEMONSTRATE INTER-PLATFORM CORRELATION</td>
<td>Clinical: Laboratory/Quality</td>
<td>Eric McGinnis</td>
</tr>
<tr>
<td>P7</td>
<td>EVALUATION OF A PATIENT SELF MEDICATION PROGRAM IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Ian Pang</td>
</tr>
<tr>
<td>P8</td>
<td>MINIMAL RESIDUAL DISEASE EVALUATION USING AN 8-COLOR FLOW CYTOMETRY PROTOCOL PREDICTS RELAPSE IN MYELOMA PATIENTS TREATED WITH FRONTLINE TANDEM AUTO-ALLO TRANSPLANT FOLLOWED BY BORTEZOMIB MAINTENANCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Jean-Sébastien Delisle</td>
</tr>
<tr>
<td>P9</td>
<td>STRENGTH TRAINING PROGRAM FOR PATIENTS FOLLOWING BONE MARROW TRANSPLANT: A PATIENT AND PHYSICIAN SURVEY IN CALGARY AB</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Sarah Perry</td>
</tr>
<tr>
<td>P10</td>
<td>HEALTH STATUS AND PREVENTIVE CARE PRACTICES AMONG SURVIVORS OF ALLO-HCT ENTERING A MULTIDISCIPLINARY SURVIVORSHIP CLINIC</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Nikki Blosser</td>
</tr>
<tr>
<td>P11</td>
<td>ASSESSMENT OF PRE-TRANSPLANT CSF IN AML PATIENTS UNDERGOING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION (ALLO-HCT) - A QUALITY IMPROVEMENT STUDY</td>
<td>Clinical: Laboratory/Quality</td>
<td>Jose Avena</td>
</tr>
<tr>
<td>#</td>
<td>TITLE</td>
<td>TOPIC</td>
<td>PRESENTING AUTHOR</td>
</tr>
<tr>
<td>----</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>P12</td>
<td>ADJUVANT INVOLVED FIELD RADIOTHERAPY POST AUTOLOGOUS STEM CELL TRANSPLANTATION FOR REFRACTORY/RELAPSED LYMPHOMAS RESULTS IN FAVORABLE OUTCOME WITH LOW TOXICITY: A SINGLE CENTER EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Panayotis Kaloyannidis</td>
</tr>
<tr>
<td>P14</td>
<td>SALVAGE TREATMENT WITH BRENTUXIMAB-VEDOTIN IN COMBINATION WITH BENDAMUSTINE FOLLOWED BY HEMATOPOIETIC STEM CELL TRANSPLANTATION, RESULTS IN HIGH SURVIVAL RATES FOR PATIENTS WITH RELAPSED OR REFRACTORY HODGKIN LYMPHOMA.</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Panayotis Kaloyannidis</td>
</tr>
<tr>
<td>P15</td>
<td>METABOLIC SYNDROME IS NOT UNCOMMON COMPLICATION POST ALLOGENEIC STEM CELL TRANSPLANTATION: A SINGLE CENTER EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Panayotis Kaloyannidis</td>
</tr>
<tr>
<td>P16</td>
<td>THE EFFECT OF MODERN THERAPEUTICS IN ADULT ACUTE MYELOID LEUKEMIA (AML): POPULATION-BASED ANALYSIS OF LONG-TERM OUTCOMES FROM THE MANITOBA CANCER REGISTRY</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Laura Tapley</td>
</tr>
<tr>
<td>P17</td>
<td>T-CELL REPLETE HLA-HAPLOIDENTICAL BLOOD AND MARROW TRANSPANTATION: EXPERIENCE FROM A CANADIAN CENTRE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Lorin Dobibaba</td>
</tr>
<tr>
<td>P18</td>
<td>PATIENT AGE AND DONOR HLA MATCHING CAN STRATIFY ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION (HCT) PATIENTS INTO PROGNOSTIC GROUPS</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Sunu Cyriac</td>
</tr>
<tr>
<td>P19</td>
<td>ASSESSING EFFICACY IN CONTROLLED CLINICAL STUDIES USING UMBILICAL CORD BLOOD TRANSPLANTATION FOR REGENERATIVE THERAPY: HETEROGENEITY IN STUDY DESIGN AND VARIABILITY IN OUTCOME REPORTING REMAIN KEY BARRIERS</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>David Allan</td>
</tr>
<tr>
<td>P20</td>
<td>WHAT’S IN THE BAG: CORD BLOOD UNIT POTENCY ASSESSMENT USING A NOVEL RAPID FLOW CYTOMETRY ASSAY</td>
<td>Clinical: Laboratory/Quality</td>
<td>Diane Fournier</td>
</tr>
<tr>
<td>P21</td>
<td>COMPARISON OF COMPLICATION RATES AND INCIDENCES ASSOCIATED WITH DIFFERENT PERIPHERALLY INSERTED CENTRAL CATHETERS (PICC) IN PATIENTS WITH HEMATOPOIEITC MALIGNANCIES: A RETROSPECTIVE COHORT STUDY</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Nicholas Scrivens</td>
</tr>
<tr>
<td>P22</td>
<td>TCRαβ+ AND CD19+ CELL DEPLETED HAPLOIDENTICAL STEM CELL TRANSPLANT IN CHILDREN: CALGARY EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Ravi Shah</td>
</tr>
<tr>
<td>P23</td>
<td>INCIDENCE OF ANICTERIC VENO-OCLUSIVE DISEASE/SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) AND DEFIBROTIDE EFFICACY FOLLOWING HEMATOPOIETIC CELL TRANSPLANTATION (HCT)</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Maya Isaila</td>
</tr>
<tr>
<td>#</td>
<td>TITLE</td>
<td>TOPIC</td>
<td>PRESENTING AUTHOR</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>P24</td>
<td>POOLED ANALYSIS OF TIME TO COMPLETE RESPONSE AFTER DEFIBROTIDE INITIATION IN PATIENTS WITH HEPATIC VENO-OCCCLUSIVE DISEASE/SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) AFTER HEMATOPOIETIC CELL TRANSPLANTATION (HCT)</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Maya Isaila</td>
</tr>
<tr>
<td>P25</td>
<td>DEFIBROTIDE COST-EFFECTIVENESS IN CANADA FOR THE TREATMENT OF VENO-OCCCLUSIVE DISEASE/SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) WITH MULTI-ORGAN DYSFUNCTION (MOD) AFTER HEMATOPOIETIC CELL TRANSPLANTATION (HCT)</td>
<td>Clinical: Pharmacy, nursing, other transplant support</td>
<td>Maya Isaila</td>
</tr>
<tr>
<td>P26</td>
<td>OUTCOMES OF ALLOGENIC HSCT IN CHILDREN WITH SEVERE APLASTIC ANEMIA USING FLUDARABINE, ALEMTUZUMAB AND LOW DOSE CYCLOPHOSPHAMIDE BASED CONDITIONING REGIMEN: CALGARY EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Ravi Shah</td>
</tr>
<tr>
<td>P27</td>
<td>COMING HOME: A POST BONE MARROW TRANSPLANT PROGRAM AT A CENTRE THAT REFERS PATIENTS OUT FOR TRANSPLANT</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Lesleigh Abbott</td>
</tr>
<tr>
<td>P28</td>
<td>PORTRAYAL OF UMBILICAL CORD BLOOD RESEARCH IN THE NORTH AMERICAN POPULAR PRESS: PROMISE OR HYPE?</td>
<td>Research: Basic/Translational</td>
<td>Alessandro Marcon</td>
</tr>
<tr>
<td>P29</td>
<td>INCIDENCE OF HEPATIC VENO-OCCCLUSIVE DISEASE (VOD) IN QUEBEC, CANADA</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Jean Lachaine</td>
</tr>
<tr>
<td>P30</td>
<td>DEVELOPMENT OF A WHITEBOARD VIDEO TO SUPPORT THE EDUCATION AND RECRUITMENT OF UNRELATED DONORS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATION</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Warren Fingrut</td>
</tr>
<tr>
<td>P31</td>
<td>DEVELOPMENT OF AN INFOGRAPHIC TO SUPPORT THE EDUCATION AND RECRUITMENT OF UNRELATED DONORS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATION</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Warren Fingrut</td>
</tr>
<tr>
<td>P32</td>
<td>STAKEHOLDER PERSPECTIVE ON THE DEVELOPMENT OF A LIBRARY OF STEM CELL DONATION STORIES</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Warren Fingrut</td>
</tr>
<tr>
<td>P33</td>
<td>INDUCTION CHEMOTHERAPY AND ALLOGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION IS A FEASIBLE TREATMENT OPTION IN OLDER ADULTS WITH ACUTE MYELOID LEUKEMIA: REAL-WORLD OUTCOMES</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Ryan Stubbins</td>
</tr>
<tr>
<td>P34</td>
<td>ARE WE CHOOSING MOBILIZATION REGIMENS FOR AUTOLOGOUS STEM CELL TRANSPLANTATION IN MULTIPLE MYELOMA WISELY?: A SINGLE CENTRE COMPARISON OF GCSF+/PLERIXAFOR VS CYCLOPHOSPHAMIDE/GCSF+/PLERIXAFOR</td>
<td>Clinical: Laboratory/Quality</td>
<td>Chloe Yang</td>
</tr>
<tr>
<td>P35</td>
<td>EXAMINATION OF MISSING SCREENING FOR DISTRESS DATA IN A SAMPLE OF AUTOLOGOUS AND ALLOGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION RECIPIENTS</td>
<td>Research: Basic/Translational</td>
<td>Jennifer Pink</td>
</tr>
</tbody>
</table>
## SCIENTIFIC PROGRAM

<table>
<thead>
<tr>
<th>#</th>
<th>TITLE</th>
<th>TOPIC</th>
<th>PRESENTING AUTHOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>P36</td>
<td>TRENDS IN AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT IN OLDER PATIENTS WITH MULTIPLE MYELOMA 2000-2017: THE CANADIAN EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Troy Climans</td>
</tr>
<tr>
<td>P37</td>
<td>INCIDENCE, RISK FACTORS, MANAGEMENT AND LONG TERM OUTCOME OF ALVEOLAR HAEMORRHAGE IN PEDIATRIC HAEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS FROM 2000 TO 2015: A SINGLE CENTRE QUATERNARY INSTITUTION EXPERIENCE</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Yogi Chopra</td>
</tr>
<tr>
<td>P38</td>
<td>EXCELLENT OUTCOMES WITH THE USE OF R-BUMELTT CONDITIONING REGIMEN FOR PRIMARY AND SECONDARY DIFFUSE LARGE B-CELL LYMPHOMA OF THE CENTRAL NERVOUS SYSTEM</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Uday Deotare</td>
</tr>
<tr>
<td>P39</td>
<td>LONG-TERM CONDITIONS OF SURVIVORS AT 20 YEARS FOLLOWING ALLOGENEIC HAEMATOPOIETIC CELL TRANSPLANTATION</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Wilson Lam</td>
</tr>
<tr>
<td>P40</td>
<td>IMPACT OF TACROLIMUS LEVELS ON THE DAY OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT ON GRAFT VERSUS HOST DISEASE</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Melanie Trinacty</td>
</tr>
<tr>
<td>P41</td>
<td>STEM CELL MOBILIZATION WITH FILGRASTIM IN PATIENTS PRIOR TO AUTOLOGOUS STEM CELL TRANSPLANT; A COMPARISON OF BIOSIMILAR FILGRASTIM TO THE ORIGINATOR</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Melanie Trinacty</td>
</tr>
<tr>
<td>P42</td>
<td>EVALUATION OF A CELL PRODUCT CULTURE COLLECTION PROCESS FROM A SINGLE INSTITUTION: OMISSION OF CULTURE COLLECTON AT TIME OF REINFUSION</td>
<td>Clinical: Laboratory/Quality</td>
<td>Anna MacDonald</td>
</tr>
<tr>
<td>P43</td>
<td>ATYPICAL CNS MANIFESTATIONS POST ALLOGENEIC STEM CELL TRANSPLANT (ALLO SCT): ARE ALL THESE CENTRAL NERVOUS SYSTEM GRAFT VERSUS HOST DISEASE (CNS GVHD)? A REPORT OF 7 CASES FROM A TERTIARY CENTRE.</td>
<td>Clinical: Clinical Trials/Observations</td>
<td>Sunu Lazar Cyriac</td>
</tr>
<tr>
<td>P44</td>
<td>WHY WE SWAB: DEVELOPMENT OF A LIBRARY OF STORIES IN STEM CELL DONATION</td>
<td>Clinical: Pharmacy, Nursing, Other Transplant Support</td>
<td>Warren Fingrut</td>
</tr>
</tbody>
</table>
P1. DOES PRE-TRANSPLANT BMI INFLUENCE COMPLICATIONS AND SURVIVAL IN PATIENTS WITH CHRONIC GRAFT VERSUS HOST DISEASE AFTER ALLOGENEIC HEMATOPOEITIC STEM CELL TRANSPLANT (A-HSCT)?

Nguyen, Nguyet¹, Tompkins, Kirsty

¹Faculty of Medicine, Memorial University of Newfoundland St John’s Newfoundland and Labrador

BACKGROUND: Obesity is both an important public health problem and a multi-factorial metabolic syndrome, which influences complications in patients after a-HSCT. Gleimer et al. (2015) found no difference in OS between obese and non-obese patients, because the increase in non-relapse mortality in obese patients were partially offset by a lower incidence of relapse rate. This suggests that there are other factors that complicate survival post-transplant: cardiovascular (CVS) events, secondary cancers, infections and metabolic syndromes which include diabetes and dyslipidemia.

OBJECTIVE: This project aims to examine whether pre-transplant body mass index (BMI) can predict post-transplant complications and overall survival in patients who developed chronic graft versus host disease (cGVHD) after allogeneic hematopoietic stem cell transplant (a-HSCT). Complications may include diabetes, infection, dyslipidemia, secondary cancers, and CVS events.

RESULTS: The review identified 102 patients who underwent a-HSCT between 2008-2018 for lymphoma, leukemia or myelodysplasia/myelofibrosis (MDS/MF). Patients were categorized based on their BMI of normal (<25 kg/m²), overweight (25-30 kg/m²) and obese (>30 kg/m²). Data analysis was done in R statistical software using a logistic regression. Developing cGVHD increases patients’ odds of developing dyslipidemia by 6.7 times (p=0.0274), but their BMI has no effect (at 5% significant level). The odds of developing post-transplant diabetes was increased by 3.6 times with a patient who is overweight (statistically significant at 10% significant level). The odds of developing CVS complications was raised by 5.6 times if the patient develops diabetes post-transplant, but the odds is decreased by 15 times if the patient was overweight (p=0.0323 and p=0.0186, respectively). The odds of having a secondary cancer was decreased by 5.9 times if the patient was obese and decreased by 5 times if the patient develops dyslipidemia- both at the 10% significant level. Notably, the odds of developing a secondary cancer is raised by 6 times in patients who develop post-transplant diabetes (p = 0.033).

CONCLUSION: Overall, dyslipidemia and diabetes post-transplant do not seem linked to pre-transplant BMI. However, they can lead to subsequent CVS complications and secondary cancers. Therefore, screening for dyslipidemia and glycemic control issues should be a part of routine follow up for all patients who underwent a-HSCT.

P2. PUBLIC SOLICITATION & THE CANADIAN MEDIA: TWO CASES, TWO DIFFERENT STORIES

Maeghan Toews (University of Adelaide, Faculty of Law) Timothy Caulfield (University of Alberta, Faculty of Law, Health Law Institute)

INTRODUCTION (OBJECTIVE): The increasingly popular trend of public solicitation is controversial. Two stories of public solicitation for living liver donors received substantial Canadian media attention in 2015: The Wager family, with twin toddlers each needing transplants, and Eugene Melnyk, wealthy owner of a professional hockey team. Because these stories provide an important opportunity to examine information the public is receiving on these issues, this study compared the print media coverage of these two stories to understand how public solicitation was portrayed, and whether coverage differed depending on the individual making the plea.

METHODS: We conducted qualitative content analysis on 155 relevant Canadian newspaper articles published between January 1, 2015 and December 31, 2016. Articles were analyzed for their description of public solicitation, benefits and issues associated with public solicitation, and overall tone with respect to public solicitation.

RESULTS: The foregrounding of public solicitation and associated ethical issues featured heavily in articles focused on Melnyk but were largely absent when discussing the Wagners. The fairness of Melnyk’s solicitation was the most prominent ethical issue raised. Laws and policies surrounding public solicitation also featured in the Melnyk story but not in articles focused on the Wagners. Public solicitation was more likely to be portrayed negatively in the Melnyk articles, but overall, was portrayed positively in relation to both Melnyk and the Wagner family.

CONCLUSIONS: Public solicitation was generally portrayed as a positive phenomenon in Canadian print media, yet there are stark differences in how these cases were presented. The Wagner story
was largely portrayed as a human-interest piece about a family in dire circumstances, while Melnyk’s wealth, status, and influence raised questions of fairness of his transplant.

**P3. POST-TRANSPLANT CYCLOPHOSPHAMIDE COMBINED WITH ATG FOR GVHD PROPHYLAXIS IMPROVES SURVIVAL AND LOWERS NON-RELAPSE MORTALITY IN OLDER PATIENTS UNDERGOING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION**

Ivan Pasic, Jeffrey H. Lipton, Dennis D. Kim, Auro Viswabandya, Santhosh Thyagu, Rajat Kumar, Wilson Lam, Arjun Law, Fotios V. Michelis

Several therapeutic strategies exist for graft-versus-host disease (GVHD) prophylaxis post hematopoietic cell transplants (HCT) and include post-transplant cyclophosphamide (PTCy) and anti-thymocyte globulin (ATG). We investigated the combined effect of PTCy with ATG on transplant outcomes in older patients at Princess Margaret Cancer Centre. Of 133 patients, 84 (63%) were male. Median age was 65 (range 60-74) and median follow-up among survivors was 28 months (range 6-60). Acute myeloid leukaemia (AML) was the most common indication for HCT (57 patients, 43%), followed by myelodysplastic syndrome (37 patients, 28%) and myelofibrosis (17 patients, 13%). Eighty-four (63%) patients had a matched unrelated donor, 37 (28%) had a matched related donor and 12 (9%) had a haploidentical donor. One hundred twenty-five (94%) patients received reduced intensity conditioning. Sixty-two (47%) patients received PTCy combined with ATG (4.5 mg/kg) while 71 (53%) received other forms of GVHD prophylaxis. OS at 2 years was 46% (95% confidence interval (CI) 37-54) in the entire cohort. Patients who received PTCy with ATG had a superior 2-year OS compared with other GVHD prophylaxis regimens (Figure 1A): 57% (95% CI 44-69) vs. 37% (95% CI 26-49), respectively (HR=0.6, 95% CI 0.4-0.9, P=0.02). The 2-year NRM for the entire cohort was 37% (95% CI, 29-46). Patients who received PTCy with ATG had a lower 2-year NRM compared to those who did not (Figure 1B): 23% (95% CI 13-34) vs. 49% (95% CI 37-60), respectively (HR=0.4, 95% CI 0.2-0.7, P=0.002). The 2-year CIR in the whole group was 24% (95% CI 17-32). Use of PTCy with ATG was associated with a modest increase in CIR at two years (Figure 1C): 35% (95% CI 22-49) vs. 16% (95% 8-25), respectively (HR=2.1, 95% CI 1.0-4.0, P=0.04). There was a trend toward lower incidence of grade II-IV aGVHD among patients who received PTCy with ATG compared to those who did not: 15% vs. 30 % (P=0.06). The incidence of grade II-IV cGVHD was lower in individuals who received PTCy with ATG compared to those who did not: 26% vs. 45% (P=0.03). These data show that in older HCT recipients, use of PTCy combined with ATG is associated with improved OS, lower NRM, decreased risk of both aGVHD and cGVHD and a modest increase in relapse risk. Therefore the PTCy with ATG combination represents an effective strategy for GVHD prophylaxis in older allogeneic HCT recipients.
P4. EFFECTIVENESS MONITORING OUTCOMES: ONE YEAR POST-IMPLEMENTATION OF AN AUTOMATED CLOSED VOLUME REDUCTION SYSTEM IN PROCESSING OF HEMATOPOIETIC PROGENITOR CELLS FOR AUTOLOGOUS TRANSPLANT

Jelena L. Holovati1,2, Brenda Letcher1, Kelly Murphy1, Sheila Langevin1, Mike Halpenny1, Tanya Petraszko1,3, Heidi Elmoazzen1

1Cord Blood and Stem Cell Manufacturing, Canadian Blood Services; 2University of Alberta, Edmonton, Alberta, Canada; 3University of British Columbia, British Columbia, Canada.

Autologous hematopoietic progenitor cell (HPC) transplantation following myeloablative therapy remains a standard intervention in the treatment of many hematological malignancies. HPCs are typically collected from peripheral blood by apheresis and cryopreserved through the addition of a cryoprotective agent, DMSO. When infused with the thawed cell suspension, DMSO may induce side effects, and volume reduction process results in a more concentrated stem cell product, thus less DMSO is required for cryopreservation. We previously reported on the first Canadian experience in implementation of an automated closed volume reduction system (BioSafe Sepax 2 PeriCell) in processing of HPCs for autologous transplant. This study describes effectiveness monitoring outcomes one year post-implementation of the automated volume reduction process in our lab. 34 HPC units from 30 patients were collected using a Spectra Optia apheresis system and volume reduced using the automated system prior to freezing. Effectiveness monitoring included unit volume reduction, % recovery of nucleated cells (Sysmex automated cell counter), CD34+ cell recovery and total cell viability (flow cytometry), overall clonogenic capacity (colony forming unit assay), sterility and hematological engraftment. The initial volume of the 34 HPC units (303 + 29 mL) was reduced by 19% after the automated centrifugation processing (247 + 9 mL), which after a year of volume reduction implementation translated into a 37.4% reduction in total HPC units stored and a 36.7% reduction in total HPC units infused. Recoveries of nucleated and CD34+ cells was 93.2 + 4.3% and 91.4 + 8.0%, respectively. There was no statistically significant difference in mean CD34+ or CFU-GM dosage in pre- vs. post-volume reduction (3.39+2.22 vs. 4.61+3.10, p=0.165; 3.82+3.00 vs. 4.77+3.44, p=0.713). White blood cell viability remained high, at 99.2 + 0.4% and the median time to neutrophil and platelet engraftment clinically acceptable (12 and 20 days). Finally, there was no statistically significant increase in incidence rates of positive sterility or adverse reactions. The effectiveness outcomes of the first Canadian experience in implementation of BioSafe Sepax 2 volume reduction system in processing of HPCs have met the predetermined acceptance criteria, supporting the use of this automated closed system in stem cell laboratory compliant with good manufacturing practice regulations.
length of stay, and have been linked to survival outcomes.

Our objective was to develop a psychosocial tool that assesses specific psychosocial risks and needs of allogenic blood and marrow one marrow transplant patients in an effort to identify patients who would benefit from additional support and resources prior to undergoing a transplant. Through the use of a standardized assessment and early psychosocial intervention and care, our goal was to address identified psychosocial risks and needs in an effort to help patients achieve improvement in their post-transplant quality of life and outcomes. We completed a systematic review of assessment tools used within UHN, as well as the Psychosocial Assessment of Candidates for Transplantation (PACT) and the Stanford Integrated Psychosocial Assessment for Transplantation (SIPAT), assessment tools regularly used by organ transplant programs. We developed an assessment tool for our program utilizing our analysis of these assessment tools and our expertise in working with the allogenic blood and one marrow transplant population at Princess Margaret. Our program has successfully integrated this standardized assessment tool and psychosocial care for all pre-allogenic bone marrow transplant patients at Princess Margaret Cancer Centre.

Our short-term observation of the utility of this assessment and psychosocial care is that it is having a strong impact on the care of our patients. Outcome measures are needed to determine this projects long-term impact on patient care.

P6. FLOW CYTOMETRY- AND SYSMEX HEMATOLOGY ANALYZER-BASED DETERMINATIONS OF CELL COUNTS IN BONE MARROW- AND APHERESIS-HARVESTED HEMATOPOIETIC STEM CELL TRANSPLANT PRODUCTS DEMONSTRATE INTER-PLATFORM CORRELATION

Eric McGinnis, University of British Columbia, Vancouver, BC, Alastair K. Williams, University of British Columbia, Vancouver, BC Suzanne M. Vercauteren, BC Children’s Hospital, Vancouver, BC Kirk R. Schultz, BC Children’s Hospital, Vancouver, BC Kate M. Chipperfield, BC Children’s Hospital, Vancouver, BC

BACKGROUND: Hematopoietic stem cell transplantation (HSCT) is a potentially life-saving therapy for malignant and non-malignant diseases. Cellular donor products for HSCT are derived from umbilical cord blood, bone marrow, or mobilized peripheral blood apheresis. HSCT outcomes have been shown to depend on cellular content of infused products, particularly the per-kilogram dose of CD34-positive (CD34+) and total nucleated (TNC) cells. Enumeration of CD34+ and TNC is readily accomplished by flow cytometry (FC), but this method requires specialized technologist training, is relatively expensive and time-consuming, and may not be available outside routine laboratory hours. Automated hematology analyzers provide rapid TNC measurement, have lower operating costs, and have less need for specialized technologist training. We sought to determine the correlation between cell counts determined by FC and those measured by Sysmex XE (SXE) or XN (SXN) series hematology analyzers.

METHODS: PB- and BM-source HSCT products processed at our pediatric institution for first HSCT during a five-year period were retrospectively reviewed, documenting TNC determined using SXE or SXN instruments (STNC) and FC measurements (using commercial Stem-Kit reagents) of TNC (FTNC), mononuclear cells (FMNC), and CD34+ cells (FCD34). Pearson product-moment correlation coefficients were computed to assess relationships between STNC, FTNC, FMNC, and FCD34.

RESULTS: 52 BM (36 SXE, 16 SXN) and 42 PB (34 SXE, 8 SXN) products were reviewed. With SXE and SXN counts considered in combined groups, correlation was found between STNC and both FTNC and FMNC in BM and PB products, with weaker correlation between STNC and FCD34 in BM but not in PB products (Table 1).

CONCLUSION: Our results demonstrate correlation between hematology analyzer and FC counts for HSCT products. Given the convenience, rapidity, and low cost of hematology analyzer measurements, further investigation to determine their role in assessment of HSCT product adequacy is warranted.

Table 1. Pearson correlation coefficients between Sysmex TNC and flow cytometry cell counts.
**P7. EVALUATION OF A PATIENT SELF MEDICATION PROGRAM IN ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION**

**Samantha Polito, University Health Network, Princess Margaret Cancer Centre, Toronto, Ontario, Lina Ho BScPharm, ACPR University Health Network, Princess Margaret Cancer Centre Toronto, ON, Ian Pang BMSc, MSc, BScPharm, ACPR University Health Network, Princess Margaret Cancer Centre Toronto, ON Celina Dara BScPhm, PharmD, ACPR University Health Network, Princess Margaret Cancer Centre Toronto, ON Auro Visuabandya MD, DM, FRCP (Edin), FRCP (London) University Health Network, Princess Margaret Cancer Centre Toronto, ON**

**BACKGROUND:** Patients admitted for allogeneic hematopoietic stem cell transplantation (allo-HSCT) are discharged with multiple new medications and medication changes. Our allo-HSCT program recently implemented a patient Self Medication Program (SMP). An SMP provides patients with an opportunity to practice self-administration of their medications in a safe and controlled environment before discharge. We assessed the impact of the SMP on patient medication knowledge, self-efficacy, adherence, and safety.

**METHODS:** Patients who participated in the SMP (SMP group) received medication counselling by a pharmacist and were provided a supply of their medications which they self-managed with nursing supervision until discharge. Patients who did not participate in the SMP (Pre-SMP group) received medication counselling by a pharmacist at discharge. Participants completed a medication knowledge and self-efficacy questionnaire within 24 hours before discharge and again at a follow-up appointment 3-5 weeks post-discharge. Safety endpoints for SMP participants, defined as medication events and incidents, were assessed by reviewing the electronic medication administration record. Medication events were defined as nurse-initiated medication/dose corrections or reminders. Medication incidents were defined as events that were not corrected before reaching the next medication administration or hospital readmission during follow-up.

**RESULTS:** Thirty-one patients (68% male, 39% ≥ 65 years) were enrolled in the Pre-SMP group and 31 patients (77% male, 19% ≥ 65 years) were enrolled in the SMP group. Median knowledge scores were 8.5/10 in the Pre-SMP group versus 10/10 in the SMP group at discharge (p = 0.0023) and 9/10 in the Pre-SMP group versus 10/10 in the SMP group at follow-up (p = 0.047). Median self-efficacy scores were 38/39 in the Pre-SMP group versus 39/39 in the SMP group at discharge (p = 0.11) and follow-up (p = 0.10). Median self-reported adherence scores at follow-up were 100% in both groups (p = 0.12). The SMP was associated with at least 1 medication event in 7 participants, and no medication incidents. Hospital readmission during follow-up was 26% in the Pre-SMP group versus 19% in the SMP group.

**CONCLUSION:** The SMP was associated with better medication knowledge at discharge and at 3-5 week follow-up when compared to the previous standard of care. We hypothesize that medication events observed while patients were participating in the SMP could have led to adverse events if experienced after discharge.

**P8. MINIMAL RESIDUAL DISEASE EVALUATION USING AN 8-COLOR FLOW CYTOMETRY PROTOCOL PREDICTS RELAPSE IN MYELOMA PATIENTS TREATED WITH FRONTLINE TANDEM AUTO-ALLO TRANSPLANT FOLLOWED BY BORTEZOMIB MAINTENANCE**


**1Hôpital Maisonneuve-Rosemont, Université de Montréal; 2McGill University Health Center, McGill University; 3Centre Hospitalier de l’Université de Montréal, Montréal, QC.**

**RATIONALE:** Allogeneic (allo) stem cell transplantation (SCT) is the only curative treatment for myeloma (MM). We hypothesized that bortezomib (BTZ) after allo SCT might decrease both relapse and chronic GVHD (cGVHD).

**OBJECTIVES:** PFS, OS and incidence of cGVHD at 24 months after allo SCT. We also sought to determine the predictive value of bone marrow (BM) minimal residual disease (MRD) using a standardized next-generation flow cytometry protocol.

**METHODOLOGY:** Prospective, phase II trial in newly diagnosed MM patients (pts) ≤ 65 years and high-risk (HR) cytogenetics, ISS 3, plasma cell leukemia or ≤ 50 years with an 8/8 sibling/unrelated donor. After BTZ-based induction and autologous SCT, a nonmyeloablative allo SCT was performed, followed by BTZ 1.3 mg/m2 SC q 2 weeks on D+120 x 1 year. GVHD prophylaxis included tacrolimus and MMF. Response was assessed with IMWG criteria. MRD was evaluated on
10x106 cells by flow cytometry (sensitivity ≥ 10-5) using the 8-color Euroflow protocol (CD45, CD38, CD138, CD56, CD19, CD27, CD81, CD117, CyIgk and CyIgl) before allo SCT, before BTZ and q 3 months x 2 years.

**RESULTS:** From 11/2014 to 11/2018, 39 pts (median age: 54 years) were allotransplanted and 35 received BTZ; an ISS 3 was found in 41% and HR cytogenetics in 65%. With a median follow-up of 24 months, NRM, PFS and OS are 6%, 65% and 91% (Fig. 1A). BTZ has improved complete response (CR) from 62% to 83% and immunophenotypic (i) CR from 26% to 63% (Table 1). Identification of < 50 MM cells 6 months after receiving BTZ is associated with a significantly lower rate of progression (15% vs 80%, p=0.03; Fig. 1B). Incidences of grade II-IV and III-IV acute GVHD at 12 months are 27% and 14%. Incidences of overall, moderate/severe and severe cGVHD at 24 months are 67%, 47% and 9% with predominance of skin, mouth and liver involvement. Compared to 42 contemporary historical controls, the overall (67% vs 83%, p=0.002) and moderate/severe (47 vs 69%, p=0.01) cGVHD incidences are lower in BTZ recipients.

**CONCLUSIONS:** Tandem auto-allo SCT followed by BTZ maintenance results in a remarkably high rate of iCR. For the first time in allo SCT recipients, we report that < 50 MM cells using an 8-color Euroflow protocol 6 months after initiating BTZ is predictive of better outcome. If confirmed, this landmark could be used to design future therapeutic interventions to lessen the risk of relapse. Finally, BTZ following allo SCT contributes to decrease both incidence and severity of cGVHD.

### Table 1.

<table>
<thead>
<tr>
<th>Induction (%)</th>
<th>Mar ASCT (%)</th>
<th>After ASCT (%)</th>
<th>During BTZ (%)</th>
<th>After BTZ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 39</td>
<td>N = 39</td>
<td>N = 39</td>
<td>N = 39</td>
<td>N = 27</td>
</tr>
<tr>
<td>iCR</td>
<td>NR</td>
<td>21%</td>
<td>26%</td>
<td>43%</td>
</tr>
<tr>
<td>CR</td>
<td>NR</td>
<td>18%</td>
<td>21%</td>
<td>17%</td>
</tr>
<tr>
<td>VGPR</td>
<td>72%</td>
<td>18%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>PR</td>
<td>21%</td>
<td>8%</td>
<td>4%</td>
<td>7%</td>
</tr>
<tr>
<td>SD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>PD</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Figure 1A.**

**Figure 1B.**
P9. STRENGTH TRAINING PROGRAM FOR PATIENTS FOLLOWING BONE MARROW TRANSPLANT: A PATIENT AND PHYSICIAN SURVEY IN CALGARY AB

Sarah Perry, BSc, MD, MSc, University of Calgary, George Francis, MD, FRCP, CSCN(EMG) - Clinical Assistant Professor, University of Calgary (Role: Author) Jason Tay, B. A. M. B. BCh. B. A. O FRCP(C), MSc(Epi) - Associate Professor, University of Calgary (Role: Author)

BACKGROUND: Patients who have undergone hematopoietic stem cell transplant (HSCT) are one of the most vulnerable patient populations. They are very ill at diagnosis and only become more frail and deconditioned throughout their courses of chemotherapy and hospital admissions. There have been several studies demonstrating the benefits of exercise in patients with hematologic malignancies and specifically for patients after HSCT. Adherence to exercise programs is often difficult to maintain in healthy populations, and is even more challenging in cancer patients. Currently, in Calgary, there are no formal exercise programs for patients post-HSCT. Given the well-defined benefits of exercise for cancer patients, there is clearly an unmet need for providing access to exercise resources to our patients post-HSCT. Virtual exercise programs, accessible from home, can be an effective means to administer a program and are becoming more popular with advances in technology.

OBJECTIVES: The aim of this initial project is to survey bone marrow transplant physicians and patients to assess their willingness to participate in this form of exercise program.

METHODS: A short survey (6 questions) was distributed to bone marrow transplant (BMT) physicians in Calgary as well as patients undergoing BMT, and then to patients who are 5 years post-BMT. The survey was be given out in paper form by one of the co-investigators during a routine clinic visit or hospital admission, and online for the BMT physicians.

RESULTS: 12 patients pre/undergoing BMT, 12 patients greater than 5 years post BMT and 10 BMT physicians participated in the survey. Overall, most patients and physicians realized the importance of exercise in the BMT setting. All patients > 5 years post-transplant agreed that an exercise program is beneficial. Most patients pre-BMT stated they would be keen to participate in an exercise program.

CONCLUSION: Overall, our survey demonstrated that both patients and physicians are aware of the importance of exercise and that this is an unmet need in our current BMT program. Developing our proposed program would benefit our current BMT patients and is endorsed by our BMT physicians.

P10. HEALTH STATUS AND PREVENTIVE CARE PRACTICES AMONG SURVIVORS OF ALLO-HCT ENTERING A MULTIDISCIPLINARY SURVIVORSHIP CLINIC

Lina Nunez, Catherine Leyshon, Anne Tremblay, Andrew Daly & Kareem Jamani

INTRODUCTION: The risks of late morbidity and mortality after allogeneic hematopoietic cell transplant (allo-HCT) may be modifiable with comprehensive survivorship care. However, the optimal model of survivorship care after adult allo-HCT is unknown.

METHODS: We established a multidisciplinary survivorship clinic for allo-HCT recipients at our institution. Patients are referred from their primary BMT physician’s clinic and are eligible if ≥ 2 years post-HCT with no active cGVHD or relapse. At initial clinic visit, patients are evaluated for the presence of and risk factors for late effects per institutional guidelines. Recommendations are discussed with the patient and are outlined in a consult note to the family physician (FP). We evaluated the health status & adherence to screening practices of the patients seen in the clinic from inception October, 2018-January, 2019.

RESULTS: 56 patients were evaluated. Median age and time post-HCT are 54 (IQR 45-63) & 11.9 years (IQR 8.1-16.3), respectively. All received myeloablative conditioning & 55% received TBI. 75% of patients reported having a complete physical with their FP in the last year. The most common chronic health conditions encountered were osteoporosis/penia (27%), hypothyroidism (25%), diabetes (20%), depression and/or anxiety (20%) and chronic lung disease (13%). The most commonly reported symptoms were fatigue (34%) and concentration/memory concerns (23%). 39% of patients have ≥1 severe co-morbidities (vascular event, diabetes, subsequent malignancy or chronic organ failure). 50% are at intermediate or high risk for a cardiovascular event by Framingham and, of these, half are on statin therapy. 41% of patients are not following recommended malignancy screening practices. The mean number of interventions/referrals per patient arising from the survivorship clinic visit did not differ between those who did vs. did not see their FP for a physical in the last year.
P11. ASSESSMENT OF PRE-TRANSPLANT CSF IN AML PATIENTS UNDERGOING ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION (ALLO-HCT) - A QUALITY IMPROVEMENT STUDY

Jose Avena, Shruti Prem, Rhida Bautista, Wilson Lam, Arjun Law, Dennis Kim, Fotios V Michilis, Jeffrey Lipton, Auro Visuabandya, Jonas Mattsson, Rajat Kumar Messner
Allogeneic Blood and Marrow Transplant Program, Princess Margaret Cancer Centre, Toronto

INTRODUCTION: Central nervous system (CNS) involvement in adults with acute myeloid leukemia (AML) is uncommon (<5%), and the effect of CNS disease on post-transplant outcomes is uncertain. At our institution, all AML patients considered candidates for allo-HCT, undergo routine lumbar puncture (LP) as part of pre-transplant evaluation. The primary objective of this quality improvement study was to assess the utility of pre-transplant cerebrospinal fluid (CSF) evaluation, and outcomes post-transplant in AML patients with CNS disease.

PATIENTS AND METHODS: We retrospectively analyzed all adult AML patients transplanted from January 2013-July 2018, at Princess Margaret Cancer Centre. CNS disease was defined as: presence of clinical, pathological or radiological evidence of CNS involvement any time after AML diagnosis, or presence of blasts in CSF at pre-transplant LP. The CSF cytospin findings (pre-transplant and any prior CSF during AML therapy) were analyzed. Overall survival (OS) and relapse-free survival (RFS) were estimated using the Kaplan-Meier method.

RESULTS: The total number of patients who underwent allo-HCTs was 339, with 69% in CR1 and 10.3% in CR2. Donors were matched sibling, unrelated, or haplo-identical and conditioning was myeloablative in 30.7%, reduced intensity in the rest. The number of HCTs and CNS findings are given in Table 1. There were 22 patients (7.4%) with history of CNS disease and all had received CNS directed therapy. They had normal CSF on pre-transplant LP. Only 3 additional patients had abnormal CSF during the pre-transplant evaluation (0.88%) with no clinical abnormalities. Their details are shown in Table 2. The median follow-up for surviving patients was 22.5 months. The 2-yr OS and RFS in the groups with and without CNS disease, were 53.3% and 47.2% respectively (p=0.32) and 51.5% and 44.6% respectively (p=0.32). The overall relapse rate was 19.2% in the entire cohort, and 32% in the group with CNS disease (these were mainly marrow relapses).

CONCLUSION: Our results suggest that pre-transplant CSF cytospin has low yield in detection of new CNS disease in AML patients planned for allo-HCT.

<table>
<thead>
<tr>
<th>Patient Nos.</th>
<th>CSF</th>
<th>CNS directed treatment</th>
<th>Outcome after HCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1 and #2</td>
<td>Blasts+</td>
<td>I/T chemo</td>
<td>Relapse marrow and CNS</td>
</tr>
<tr>
<td>#3</td>
<td>Single blast</td>
<td>Nil</td>
<td>Alive at 5 yr</td>
</tr>
</tbody>
</table>

Table 1.

Table 2.
P12. ADJUVANT INVOLVED FIELD RADIOTHERAPY POST AUTOLOGOUS STEM CELL TRANSPLANTATION FOR REFRACTORY/RELAPSED LYMPHOMAS RESULTS IN FAVORABLE OUTCOME WITH LOW TOXICITY: A SINGLE CENTER EXPERIENCE

Kaloyannidis, Panayotis1, Eshrak Al Shaibani2, Eman Debayy2, Rowan Omari2, Deia Auami2, Solaf Kanfar2, Mohamad Darweesh1, Enas Mutahar2, Ahmed Al Buali1, Afra Dayel4, Ioannis Apostolidis1, Khalid Al Anezi1, Hani Al Hashmi1

1Adult Hematology and Stem Cell Transplantation Department; 2Radiation Oncology Department; 1Medical Imagine Department, 4Pathology and Lab Medicine Department, King Fahad Specialist Hospital, Dammam, Saudi Arabia

BACKGROUND: Involved field radiotherapy (IFRT) to bulky or localized residual disease in the field of autologous stem cell transplantation (ASCT) for lymphomas, is widely used to minimize the risk of relapse. However, the proper time for IFRT remains controversial. Adjuvant IFRT (adj-IFRT) in the pre-ASCT period might cause toxicity which could lead to delay or even cancelation of ASCT resulting in increased relapse risk, or could negatively affect the marrow environment, resulting in impaired engraftment. On the contrary, adj-IFRT in the post-ASCT period, upon marrow recovery, offers the advantage of delivering irradiation in lower tumor burden (assuming a sufficient disease response after conditioning regimen) without influencing the engraftment.

METHODS: To assess the safety and efficacy of the adj-IFRT in the early post ASCT period, we retrospectively evaluated 23 autografted patients (pts) for refractory/relapsed Hodgkin (n=14) or Non-Hodgkin (n=9) lymphomas, aged of 34(16-76) years. Pts with bulky disease at the time of relapse post 1st line treatment or with residual mass before ASCT were considered as candidates for early adj-IFRT after engraftment establishment. At the time of ASCT, 20(80%) pts had residual disease while 4(20%) evaluated to be in complete remission. The preparative regimens were single-agent high dose Melphalan (n=9) or multiagent myeloablative regimen (n=14). Filgrastim was given till neutrophils recovery, while prophylaxis against bacteria, fungus, viruses and PCP till the completion of adj-IFRT.

RESULTS: The engraftment was successful. None pt experienced severe toxicity or infection before adj-IFRT. Though our plan was to offer adj-IFRT within 3 months post ASCT, finally it was delivered after a median of 4,5 (2-7) months; the median radiation dose was 30(24-36) Gy. The majority of pts received IFRT in the mediastinum (n=10) or in the abdomen/inguinal area (n=9). The treatment was well tolerated. No toxicity gr>3 was noticed and no pt required hospitalization. After a median follow-up of 2(2-5) years, 19 pts are alive; the 5-years overall and progression free survival rates are 75% and 55% respectively. Two pts succumbed to relapsed disease and 2 heavily pretreated pts died due to secondary myelodysplastic syndrome.

CONCLUSIONS: In our study, the early post-transplant adj-IFRT demonstrated a safe and efficacious profile. Well-designed trials are needed to clarify the role and the timing of adj-IFRT in the ASCT setting.


Kaloyannidis, Panayotis1, Eshrak Al Shaibani2, Mohamad Darweesh1, Nihad Mokhtar1, Hani Al Hashmi1, Asif Moinuddin1, Eshrak Al Shaibani1, Solaf Kanfar2, Enas Mutahar2, Ayman Ablulhassani1, Salman Harbi4, Heba Raslan1, Asif Moinuddin1, Ioannis Apostolidis1, Khalid Al Anezi1, Hani Al Hashmi1

1Adult Hematology and Stem Cell Transplantation Department; 2Radiation Oncology Department; 1Medical Imagine Department, King Fahad Specialist Hospital, Dammam, Saudi Arabia

BACKGROUND: The response to salvage therapy directly affects the outcome post autologous stem cell transplantation (ASCT) for refractory lymphomas. Therefore the importance of an effective and safe 2nd line treatment is indisputable.

METHODS: We retrospectively evaluated 67 patients (pts) with refractory lymphomas, aged of 34,5(16-75) years, who received as 1st salvage either DICEP [Cyclophosphamide (1750mg/m2), Etoposide (350mg/m2), Cisplatin (35mg/m2), days 1-3, (n=23)] or the widely used regimen ESHAP (n=44).

RESULTS: Thirty four pts had primary induction failure (PIF), 14 for early relapsed (<12 months post induction-remission) and 19 for late relapsed disease. More specifically, 19(83%) pts from the DICEP- and 29 pts (65%) from the ESHAP-group were assessed with PIF or early relapsed disease, but this difference had not statistical significance.
Both regimens were well tolerated and no lethal toxicities were noted. Eleven pts (48%) from DICEP- and 4(10%) from ESHAP-group developed febrile infections. Only one pt from the ESHAP-group, required for short period admission to the intensive care unit. After either 1 cycle (DICEP-group) or 2 cycles (ESHAP-group) the disease was re-assessed by PET/CT scan. The response rate was significantly superior for the DICEP-group, 92% vs 64% (p=0.003); eleven (48%) pts from the DICEP-group and 14(30%) from the ESHAP-group achieved complete metabolic remission (p=ns). Second salvage was given to 12(27%) pts from the ESHAP-group compared to one (4%) from the DICEP-group. The total hospitalization days (including the 2nd salvage) were 20(5-25) vs 30(16-33) for DICEP- and ESHAP-group respectively. The stem cell collection was efficient for both groups. All but 2 pts underwent ASCT. The median period from 1st salvage to ASCT was significantly shorter for the DICEP-group (64 vs 128 days, p=0.013). The 3-years overall and progression free survival were similar for both groups (95% vs 88% and 70% vs 80% respectively). Two heavily pretreated pts who received ESHAP developed secondary myelodysplastic syndrome post ASCT.

CONCLUSIONS: In this study both regimens proved to be safe. Though the majority of pts in the DICEP-group had PIF or early-relapsed disease, it was significantly more effective, resulting in an earlier ASCT, less exposure to additional chemotherapy, that might led in less long-term toxicity. Prospective trials with large series of patients are needed to determine the role of DICEP as 1st salvage treatment.

P14. SALVAGE TREATMENT WITH BRENTUXIMAB-VEDOTIN IN COMBINATION WITH BENDAMUSTINE FOLLOWED BY HEMATOPOIETIC STEM CELL TRANSPLANTATION, RESULTS IN HIGH SURVIVAL RATES FOR PATIENTS WITH RELAPSED OR REFRACTORY HODGKIN LYMPHOMA

Kaloyannidis, Panayotis, Eshrat Al Shaibani, Deia Auwami, Mohamed Al Darweesh, Ayman Albuhlassan, Naeema Musailem, Enas Mutahar, Solaf Kanfar, Apostolidis John, Khalid Al Anazi, , Hani Al Hashmi

Adult Hematology and Stem cell transplantation department King Fahad Specialist Hospital, Dammam, Saudi Arabia

BACKGROUND: The incorporation of the novel-agents in the salvage protocols for patients (pts) with refractory/relapsed Hodgkin Lymphoma (RR-HL) results in remarkable responses and therefore might improve the ultimate outcome after autologous stem cell transplantation (autoSCT). However, the optimal salvage regimen still remains a challenge. Brentuximab-vedotin and Bendamustin have been used either as single agents or in combination (BvB) in RR-HL and demonstrated promising results

METHODS: In the present study we evaluated the efficacy and safety of the combination of BvB in 22 pts. (13 males, 9 females) with RR-HL. Their median age was 34(16-69) years. Five (23%) pts received BvB as 1st while 17 (77%) as ≥ 2nd salvage treatment. Advanced stage (eIIb) had 17 (77%) pts while 5 had previously undergone autoSCT. After a median of 1,5 (0,2-3.5) years from initial diagnosis, the BvB treatment was administered in an outpatient basis at the doses of: Brentuximab 1,8 mg/kg (IV infusion) on day1 and Bendamustin 90 mg/m2 (IV infusion)on days1 and 2, in 3-week cycles.

RESULTS: The treatment plan was to administer at least 2 cycles of BvB. Finally, 21 pts completed at least 2 cycles of the treatment. One pt received only the 1st day of therapy because of allergic reaction to Bendamustin, and was the only one who required 2-days admission; another pt developed transient neuropathy. No other toxicities WHO ≥3 were observed. After a median of 3 (1-6) cycles, according to the PET/CT (Deauville criteria) the overall response rate was 80%; 7/22 (30%) were assessed to be in complete remission, 8/22 (35%) achieved major response (>75% tumor reduction) while 3/22 (15%) had tumor reduction of 50-75%. In 4 (20%) pts the disease progressed. The stem cells collection was successful for all the responded-pts. Eventually, the 15 good-responders underwent transplantation after a median of 72 (53-136) days post BvB; 4/5 previously autografted pts underwent alloSCT. Nineteen (85%) pts are alive; 2 succumbed to disease progression and 1 to treatment-related cause post alloSCT. The 5-years overall survival for the whole cohort of pts is 75% while for those who proceeded to transplant (auto or allo) reaches 90%.

CONCLUSION: These promising results in our poor-risk cohort of pts support the evidence that the BvB combination is an efficient and safe approach and merits further investigation to clarify its role as a potential “salvage-bridge” to a successful ASCT for pts with RR-HL.
P15. METABOLIC SYNDROME IS NOT UNCOMMON COMPLICATION POST ALLOGENEIC STEM CELL TRANSPLANTATION: A SINGLE CENTER EXPERIENCE

Kaloyanidis, Panayotis1, Eshrak Al Shaibani1, Deia Awami1, Solaf Karfar1, Ahmed Bahran1, Rabab Attas1, Hani Al Hashmi1, Khalid Al Anezi1

1Adult Hematology and Stem Cell Transplantation Department; 2Pathology and Lab Medicine Department King Fahad Specialist Hospital, Dammam, Saudi Arabia

BACKGROUND: The post-transplant metabolic syndrome (PT-MS) is a well described complication post allogeneic stem cell transplantation (alloSCT) in pediatric patients (pts) and only few studies have evaluated the prevalence of the PT-MS in adults.

METHODS: To estimate the incidence, the risk factors and the impact of the PT-MS on the alloSCT outcome, we retrospectively evaluated, 42 pts (25 males and 17 females) allografted from 2011-18 and had adequate clinical and laboratory data and at least 6 months follow-up. The median age was 35.5 (17-62) years. Peripheral blood stem cells graft was infused in 34 pts and marrow in 8, originated from full matched siblings (n=35) or haploidentical donors (n=7). Twenty eight received myeloablative and 14 reduced intensity conditioning regimen. Calcineurin inhibitors were given as part of GVHD prophylaxis. The PT-MS diagnosis based on the NCEP-ATPIII criteria while for the statistical analysis the T-test, logistic regression analysis and log-rank test were used.

RESULTS: Within the first 6 months post alloSCT, 20(47.6%) pts were diagnosed with PT-MS; 17 diagnosed within the 1st trimester while 3 within the 2nd trimester post alloSCT. Hyperglycemia or BMI>25kg/m² was found in 20 pts, elevated triglycerides levels in 13, low HDL levels in 12 and hypertension in 10. Four (20%) pts had a previous known history of MS for 10 pts no data were available prior alloSCT for the MS diagnosis. In 7/20 (35%), the syndrome was reversible after the 6th month post alloSCT. Patients’ gender, age, BMI, the type of conditioning regimen and GVHD co-existence were investigated as potential predisposing factors for PT-MS. In uni- and multi-variate analysis only BMI>25kg/m2 and age>35 years were significantly associated with PT-MS diagnosis (p< 0.03). The PT-MS did not affect negatively the survival or the Transplant Related Mortality incidence.

CONCLUSIONS: In our study, we demonstrated that the PT-MS is not unusual complication in the early post alloSCT period. However, for a significant number of pts has reversible course. For pts with high risk features (BMI>25kg/m2, age> 35 years, known history of diabetes-mellitus, dyslipidemia, hypertension) close monitoring, specific diet and encouragement for adequate exercise might help to reduce the incidence and the severity of PT-MS. Nevertheless, prospective and well design trials are warranted to determine the accurate incidence, severity and the impact of PT-MS on the alloSCT outcome.

P16. THE EFFECT OF MODERN THERAPEUTICS IN ADULT ACUTE MYELOID LEUKEMIA (AML): POPULATION-BASED ANALYSIS OF LONG-TERM OUTCOMES FROM THE MANITOBA CANCER REGISTRY

Laura Tapley, University of Manitoba, Winnipeg, Manitoba, Oliver Bucher - Department of Epidemiology and Cancer Registry, CancerCare Manitoba, Winnipeg, Manitoba, Canada Katie Galloway - Department of Epidemiology and Cancer Registry, CancerCare Manitoba, Winnipeg, Manitoba, Canada Dr. Kristjan Paulson - Department of Medical Oncology and Hematology, CancerCare Manitoba, University of Manitoba, Winnipeg, MB, Canada and CancerCare Manitoba/Manitoba Blood and Marrow Transplant Program, Winnipeg, Manitoba, Canada and Section of Hematology/Oncology, Department of Internal Medicine, Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, MB, Canada Dr. Matthew D. Seftel - Department of Medical Oncology and Hematology, CancerCare Manitoba, University of Manitoba, Winnipeg, MB, Canada and CancerCare Manitoba/Manitoba Blood and Marrow Transplant Program, Winnipeg, Manitoba, Canada and Section of Hematology/Oncology, Department of Internal Medicine, Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, MB, Canada Dr. Kristjan Paulson - Department of Epidemiology and Cancer Registry, CancerCare Manitoba, Manitoba Blood and Marrow Transplant Program, Winnipeg, Manitoba, Canada and Section of Hematology/Oncology, Department of Internal Medicine, Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, MB, Canada

INTRODUCTION: The prognosis for adults with acute myeloid leukemia (AML) is historically poor. Advances in supportive care and therapeutics such as blood and marrow transplant (BMT) and hypomethylating agents may have improved outcomes. In Manitoba (MB), patients with AML are managed at a single cancer centre with all AML cases collected in a provincial cancer registry, increasing reliability of population-based data with uniform approach to case ascertainment and follow-up.

OBJECTIVE: Describe characteristics and relative survival of patients with AML in MB, with attention to temporal trends and outcomes in rural patients, where access to care may be challenging.

SUMMARY: Data was collected on cases of adult AML reported to the Manitoba Cancer Registry (MCR) from 1990-2014. Life tables from
Statistics Canada were used as reference for expected survival in the general population. Patient demographics were stratified by age, time period and residence at diagnosis. Two-year age-standardized relative survival was estimated using the cohort method within various subcategories, including time period of diagnosis (5 year increments), sex and Winnipeg versus non-Winnipeg location. A total of 910 patients of age 15-99 were captured in the MCR from 1990-2014 with survival data to 2016. Of the 910 patients, 517 were men and 511 were residents of Winnipeg at diagnosis. Two-year crude relative survival estimates by time period and age group demonstrated improving relative survival for each age quintile category within each 5-year time period, with the greatest increase over time in patients aged 15-54. Total two-year age-standardized relative survival was estimated at 20.4% (CI 95% 17.8-23.1%) for all patients, 19.2% (CI 95% 16.0-22.7%) in males, 21.93% (CI 95% 17.9-26.3%) in females, 20.3% (CI 95% 16.9-23.9%) in Winnipeg, and 20.5% (CI 95% 16.7-24.6%) outside Winnipeg.

CONCLUSION: We demonstrate improved relative survival in adult AML over time, notably in those aged 15-54, where BMT has played an increasingly important therapeutic role. Advanced supportive care and hypomethylating agents may also have contributed to improved outcomes, especially in older patients. Similar relative survival for Winnipeg and non-Winnipeg patients supports the benefit of a centralized cancer centre. Further analyses will incorporate individual variables such as cytogenetics, history of myelodysplastic syndrome (MDS), and receipt of BMT and hypomethylating agents.

METHODS: Patients included in the study underwent haploidentical stem cell transplantation at the Juravinski Hospital and Cancer Centre in Hamilton, Canada from Jan 2014 until May 1, 2018. Patients were transplanted for acute myeloid leukemia, acute lymphoblastic leukemia, myelodysplastic syndrome, myelofibrosis, hodgkin lymphoma, non-hodgkin lymphoma and aplastic anaemia. The conditioning protocol included fludarabine 30 mg/m2 on Day -6 to Day -2, cyclophosphamide 14.5 mg/kg Day -6 and Day -5, TBI 200cGy Day -1 and post-transplant cyclophosphamide 50 mg/kg on Day +3, +4. Fisher’s Exact test and logistic regression was used to generate odds ratios and statistical significance. Kaplan-Meier curves for survival, ANC and platelet recovery were generated using STATA.

RESULTS: In total, 29 patients have undergone haplo-transplantation at the centre. The mean age at transplant was 46 years old. The median time to engraftment for neutrophils (ANC > 0.5) was 17 days and the median time to engraftment for platelets (plt>20) was 12 days. CMV reactivation requiring pre-emptive treatment occurred in 10 out of 29 patients (18 of recipient/donor pairs were CMV seropositive). The rate of the acute GVHD was 58%. The overall survival after a mean follow-up of 357 days was 76%. Sepsis was the cause of death for five patients while failure to engraft and relapse each contributed to one death. Sex, age, previous transplant, previous number of treatments, donor relationship, GVHD, type of infection and days in hospital post-transplant were not associated with an increased risk of death. Presence of any infection after transplant (RR 2, CI 1.32-3.04, p = 0.026) was associated with an increased risk of death, while number of days until neutrophil engraftment showed increased risk but was not significant (OR 1.17, CI 0.93-1.46, p = 0.17).

CONCLUSION: Haploidentical transplants have previously been shown to be effective for treating hematologic malignancies. Our experience shows that this procedure can be completed with similar outcomes at a Canadian centre.
### Table 1 – Patient Characteristics

<table>
<thead>
<tr>
<th>Total Number of Patients</th>
<th>29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age at transplant (years)</td>
<td>46</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>18</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>AML</td>
<td>10</td>
</tr>
<tr>
<td>MDS</td>
<td>4</td>
</tr>
<tr>
<td>Hodgkin’s Lymphoma</td>
<td>8</td>
</tr>
<tr>
<td>Follicular Lymphoma</td>
<td>2</td>
</tr>
<tr>
<td>ALL</td>
<td>1</td>
</tr>
<tr>
<td>Myelofibrosis</td>
<td>1</td>
</tr>
<tr>
<td>Mantle cell lymphoma</td>
<td>1</td>
</tr>
<tr>
<td>Aplastic Anemia</td>
<td>1</td>
</tr>
<tr>
<td>Mixed phenotype leukemia</td>
<td>1</td>
</tr>
<tr>
<td>Previous Autologous Transplants</td>
<td>12 (39%)</td>
</tr>
<tr>
<td>Average number of previous treatments (range)</td>
<td>1 (0-3)</td>
</tr>
<tr>
<td>EBV reactivity</td>
<td>5</td>
</tr>
<tr>
<td>CMV positivity prior to transplant (number of patients)</td>
<td>12</td>
</tr>
</tbody>
</table>

### Table 2 – Donor Characteristics

<table>
<thead>
<tr>
<th>Sex</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>16</td>
</tr>
<tr>
<td>Female</td>
<td>13</td>
</tr>
<tr>
<td>Relationship to Patient</td>
<td></td>
</tr>
<tr>
<td>Parent</td>
<td>6</td>
</tr>
<tr>
<td>Sibling</td>
<td>12</td>
</tr>
<tr>
<td>Child</td>
<td>11</td>
</tr>
<tr>
<td>CMV positivity (number of donors)</td>
<td>16</td>
</tr>
</tbody>
</table>

### Table 3 – Complications after transplant

<table>
<thead>
<tr>
<th>Cause of Death</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to engraft</td>
<td>1</td>
</tr>
<tr>
<td>Sepsis</td>
<td>5</td>
</tr>
<tr>
<td>Bacterial</td>
<td>4</td>
</tr>
<tr>
<td>Fungal</td>
<td>1</td>
</tr>
<tr>
<td>Viral</td>
<td>0</td>
</tr>
<tr>
<td>Relapse/Progression</td>
<td>1</td>
</tr>
<tr>
<td>GVHD</td>
<td>16</td>
</tr>
<tr>
<td>CMV reactivation after transplant (number of patients)</td>
<td>10</td>
</tr>
<tr>
<td>Patients with fungal infection</td>
<td>6</td>
</tr>
</tbody>
</table>

P18. PATIENT AGE AND DONOR HLA MATCHING CAN STRATIFY ALLOGENEIC HEMATOPOIETIC CELL TRANSPLANTATION (HCT) PATIENTS INTO PROGNOSTIC GROUPS

Sunu Cyriac, Mohammed Marei, Jeffrey H. Lipton, Dennis D. Kim, Auro Viswabandya, Raj number of patients. Numerous pre-transplant risk scores have been developed to predict outcomes, such as the Hematopoietic Cell Transplantation-Comorbidity Index (HCT-CI). This study assesses the value of the HCT-CI and related scores on a single center population.

**METHODS:** Two separate physicians prospectively calculated the HCT-CI score for all patients transplanted at our center. The age-adjusted HCT-CI score and the augmented HCT-CI score was calculated retrospectively. Non-Relapse Mortality (NRM) and Overall survival (OS) were calculated to assess the prognostic power of the scores.

**RESULTS:** From 2014 August and 2016 April, 299 patients underwent allogeneic HCT. Patient characteristics are described in Table 1. On univariate analysis, 2-year OS of the entire cohort was 51% (95% CI 45-56%). For the HCT-CI scores 0-2 vs ≥3, 2-year OS was 53% vs 46% respectively (p=0.29). For the HCT-CI/age scores 0-2 vs ≥3, it was 56% vs 44% respectively (p=0.03). For the augmented HCT-CI scores 0-2 vs ≥3, it was 55% vs 46% respectively (p=0.05). Among other variables, age group (<50 vs 50-64 vs ≥65, p=0.02) and donor mismatch (p=0.01) were significant for OS. But age (HR 1.48 and 1.75 for age 50-64 and ≥65 respectively, p=0.047) and donor mismatch (HR 1.60, p=0.02) alone were prognostically significant in multivariate analysis. We then developed a weighted score that would better reflect risk groups in our population. Age <50 and full HLA matching received 0 point each, age 50-64 and any mismatch (except DQ alone) received 1 point each, while age ≥65 received 2 points. The patients were grouped into 3 groups of 0, 1 and ≥2 points. 2-year OS for score 0 (n=68) was 62% (95%CI 49-72%), for score 1 (n=149) was 53% (95%CI 45-61%), and for score ≥2 (n=82) was 38% (95%CI 27-48%) (p=0.0004). The score was also predictive of NRM; 2-year NRM for score 0 was 24% (95%CI 14-34%), for score 1 was 34% (95%CI 26-42%), and for score ≥2 was 43% (95%CI 32-53) (p=0.015). Multivariate analysis confirmed the independent
prognostic value of the scoring system for OS and NRM.

**CONCLUSION:** A simple, weighted score involving donor HLA mismatch and age predicts survival and NRM better than the HCT-CI score for patients transplanted at our center. Further studies may assist in the development of transplant center-specific predictors of risk.

### Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Median age (Range)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;50</td>
<td>85</td>
<td>28%</td>
</tr>
<tr>
<td>50-64</td>
<td>154</td>
<td>52%</td>
</tr>
<tr>
<td>&gt;65</td>
<td>60</td>
<td>20%</td>
</tr>
<tr>
<td><strong>DONOR MATCH</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Matched donor</td>
<td>246</td>
<td>82%</td>
</tr>
<tr>
<td>Mismatched donor (including haplo, excluding DQ)</td>
<td>53</td>
<td>18%</td>
</tr>
<tr>
<td><strong>DONOR TYPE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Related donor</td>
<td>110</td>
<td>37%</td>
</tr>
<tr>
<td>Unrelated donor</td>
<td>167</td>
<td>56%</td>
</tr>
<tr>
<td>Haplo Donor</td>
<td>22</td>
<td>7%</td>
</tr>
<tr>
<td><strong>STEM CELL SOURCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB</td>
<td>295</td>
<td>99%</td>
</tr>
<tr>
<td>BM</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td><strong>CONDITIONING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAC</td>
<td>110</td>
<td>37%</td>
</tr>
<tr>
<td>RIC</td>
<td>189</td>
<td>63%</td>
</tr>
<tr>
<td><strong>DIAGNOSIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AML</td>
<td>151</td>
<td>51%</td>
</tr>
<tr>
<td>ALL/MPAL</td>
<td>27</td>
<td>9%</td>
</tr>
<tr>
<td>LYMPHOMA</td>
<td>12</td>
<td>4%</td>
</tr>
<tr>
<td>CHRONIC LEUKEMIAS</td>
<td>21</td>
<td>7%</td>
</tr>
<tr>
<td>MDS</td>
<td>45</td>
<td>15%</td>
</tr>
<tr>
<td>MF</td>
<td>25</td>
<td>8%</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
<td>6%</td>
</tr>
<tr>
<td><strong>CMV STATUS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O/R</td>
<td>52</td>
<td>17%</td>
</tr>
<tr>
<td>Others</td>
<td>247</td>
<td>83%</td>
</tr>
<tr>
<td><strong>HCT-CI SCORE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>202</td>
<td>68%</td>
</tr>
<tr>
<td>≥3</td>
<td>97</td>
<td>32%</td>
</tr>
<tr>
<td>Age adjusted HCT-CI (40 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>164</td>
<td>55%</td>
</tr>
<tr>
<td>≥3</td>
<td>135</td>
<td>45%</td>
</tr>
<tr>
<td>Augmented HCT-CI (HCT-CI+ Ferritin, albumin and platelet)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-2</td>
<td>166</td>
<td>56%</td>
</tr>
<tr>
<td>≥3</td>
<td>133</td>
<td>44%</td>
</tr>
</tbody>
</table>

P19. ASSESSING EFFICACY IN CONTROLLED CLINICAL STUDIES USING UMBILICAL CORD BLOOD TRANSPLANTATION FOR REGENERATIVE THERAPY: HETEROGENEITY IN STUDY DESIGN AND VARIABILITY IN OUTCOME REPORTING REMAIN KEY BARRIERS

David Allan, Joseph Aziz, Gary Liao, Zach Adams, Mina Rizk

**BACKGROUND:** The use of umbilical cord blood (UCB) for novel indications in regenerative therapy has been reported in increasing numbers of publications for an expanding list of new indications. With the rapid increase in publications, we updated our systematic review...
of the literature focusing only on controlled trials with the goal of evaluating the safety and efficacy of potential new indications.

Methods and RESULTS: A total of 359 new records were identified between Jun 1, 2016 and April 1, 2018 (PROSPERO protocol registered June 9, 2016; #CRD42016040157). After removing duplicates and reviewing potential relevant articles in full, a total of 4 published controlled studies were combined with 9 published controlled studies from our initial search in 2016; a total of 13 studies. The included studies addressed the treatment of cerebral palsy (3 studies), type 1 diabetes (3 studies), hypoxic ischemic encephalopathy (1 study), diabetic peripheral vascular disease (1 study), liver cirrhosis (1 study), traumatic brain injury (1 study), diabetic microalbuminuria (1 study), optic nerve hypoplasia (1 study), and deep acute burn injury (1 study). An additional 6 publications in Chinese could not be accessed. For the 7 indications where only 1 controlled trial has been published, 6 used allogeneic UCB cells (not study of burns) and 5 infused mesenchymal stromal cells derived from UCB (all but study of type 2 diabetes). All but 1 study reported benefit (treatment of optic nerve hypoplasia not beneficial). In the 3 controlled studies using UCB for type 1 diabetes, 2 studies used autologous cells while 1 used allogeneic UCB to “educate” autologous lymphocytes. Taken together, there was no clear difference at HbA1c levels or daily insulin requirements between treated patients and controls. In the 3 controlled studies of patients with cerebral palsy, 2 studies used partially HLA-compatible allogeneic UCB cells and these studies reported greater improvement in the GMPM scores at 1, 3 and 6 months compared to controls. The results were mixed in terms of other scores such as the GMPM at other time points, BSID II (mental) and BSID II (motor). One study of autologous UCB treatment reported an improvement in GMFM scores at 12 months compared to controls.

CONCLUSIONS: More controlled studies are needed that use similar approaches in terms of cell source and outcome measures at similar time points. Published studies remain modest in size, limiting assessment of efficacy.

P20. WHAT’S IN THE BAG: CORD BLOOD UNIT POTENCY ASSESSMENT USING A NOVEL RAPID FLOW CYTOMETRY ASSAY

Diane Fournier1, Patrick Trépanier1, Carl Simard2 and Sonia Néron2.

1Héma-Québec Stem Cells Laboratory and Cord Blood Bank (St-Laurent, Québec); 2Héma-Québec Innovation (Québec City)

According to NetCord FACT Standards, cord blood banks have to determine the potency of cord blood units (CBUs) on a representative sample of the cryopreserved product before release to a transplant center. Héma-Québec cord blood bank measure potency using the gold standard colony-forming unit method (CFU). This method requires at least 7 to 14 days for the results to be reported to the clinician or registry. While the CD34 and CD45 enumeration and viability determined by flow cytometry can be available within hours, the significant delay for obtaining CFU results can be of concern for urgent medical decisions and may not serve the patient’s best interest. There are few commercially available rapid potency tests and while they measure a product’s potency, they generally won’t allow for a conclusive detection of a growth-impaired unit, such as identifying one that has been exposed to a warming event. The need for a quick, accurate, sensitive and extensively validated assay to determine stem cell products potency for CBUs is highlighted and addressed in this work. A 24h flow cytometry method to assess the response of CD34+ cells to interleukin-3 (IL-3) was developed by our research lab in order to address the delay and sensitivity problem (Simard et al. 2019, Transfusion, in press). The flow cytometry assay measure the proportion of CD34+CD45Lo cells positive to STAT5 phosphorylation after IL-3 stimulation. The final result can be obtained within 24h. When compared to the standard CFU method and ADLH potency determination, the IL-3 protocol has proven to be more accurate in measuring potency for CBUs. Also, the IL-3 protocol was shown to be a better potency predictor than using CD34 and CD45 viability alone. Since the method has proven to be working well in our study, an extensive method validation is currently ongoing in order to integrate it as a standard operating procedure. Given the promising results using CBU samples and the ongoing validation, we also initiated a study for the IL-3 protocol using 20 samples of autologous peripheral-blood stem cells, as these products turnaround time between collection and infusion are frequently under 14 days. We are looking forward to collecting and sharing more data from this validated method with CBUs and autologous PBSCs.
P21. COMPARISON OF COMPLICATION RATES AND INCIDENCES ASSOCIATED WITH DIFFERENT PERIPHERALLY INSERTED CENTRAL CATHETERS (PICC) IN PATIENTS WITH HEMATOLOGICAL MALIGNANCIES: A RETROSPECTIVE COHORT STUDY

Nicholas Scrivens¹, Elham Sabri¹, Christopher Bredeson¹,²,³ and Sheryl McDiarmid¹,²

¹The Ottawa Hospital Research Institute, Ottawa, Ontario ²The Ottawa Hospital, Ottawa, Ontario ³The University of Ottawa, Ottawa, Ontario

BACKGROUND: Patients with hematological malignancies (HM) or undergoing hematopoietic cell transplantation (HCT) require reliable vascular access. While central venous catheters (CVCs) have traditionally been used, peripherally inserted central catheters (PICC) are increasingly meeting this need. Previous studies suggest that patients with HM or undergoing HCT have higher rates of PICC-associated complications such as central line-associated bloodstream infections (CLABSI) and upper-extremity deep vein thrombosis (UEDVT). This retrospective cohort study aims to determine if PICC type has an influence on the rate and incidence of complications in this complex patient population.

METHODS: The four PICC types compared in this study were inserted at The Ottawa Hospital in patients with HM or undergoing HCT. Insertions, maintenance and troubleshooting was performed by a vascular access team. The prospectively collected data used in this study was extracted from the institution’s vascular access program database. The incidences and rates (per 1000 catheter days (CDs)) of complications were calculated and compared across PICC types for the following complications: CLABSI, UEDVT, complete and withdrawal occlusions, and migrations. Statistical analysis also included multivariable regression analysis to adjust for factors including: age, sex, PICC type, HCT treatment, patient location and diagnosis. Table 1. Complication type and rate (per 1000 CDs)

RESULTS: Four hundred and eighty-five PICCs were inserted into 469 complex patients with HM or undergoing HCT requiring a dual lumen PICC: 161 Groshong®, 60 PowerPICC® Solo, 165 BioFlo®, and 99 Arrow®. The rates and incidences of all complications differed significantly across the four PICC types. Furthermore, the rates and incidences of each complication type, except CLABSI, varied significantly across the PICC types. Following multivariate adjustment, PICC type was associated with the rate of complication.

CONCLUSION: This study highlights that PICC type may influence the risk of complications in this complex patient group. Interestingly, the use of antimicrobial PICCs did not decrease the rate of CLABSI. PICCs are safe to use in this population, however, the risk of complication should not be overlooked and the influence of PICC type should be considered in clinical decisions.

Table 1. Complication type and rate (per 1000 CDs)

<table>
<thead>
<tr>
<th>Complication Type</th>
<th>Groshong</th>
<th>BioFlo</th>
<th>PowerPICC Solo</th>
<th>ARROW</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Complications</td>
<td>7.40</td>
<td>13.61</td>
<td>16.21</td>
<td>26.41</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>UEDVT</td>
<td>0.31</td>
<td>1.37</td>
<td>0.49</td>
<td>1.48</td>
<td>0.002</td>
</tr>
<tr>
<td>CLABSI</td>
<td>0.61</td>
<td>0.53</td>
<td>0.65</td>
<td>0.74</td>
<td>0.955</td>
</tr>
</tbody>
</table>

P22. TCRαβ+ AND CD19+ CELL DEPLETED HAPLOIDENTICAL STEM CELL TRANSPLANT IN CHILDREN: CALGARY EXPERIENCE

Shah R, Berrigan S, Dharmani-Khan, Truong T, Desai S, Guilcher G, Auer Iwona, Prokopishyn N, Lewis V

BACKGROUND: HLA-mismatched transplant is associated with bidirectional alloreactivity that results in higher incidences of GVHD and graft failures. Eliminating GVHD causing TCR αβ+ T cells while retaining beneficial TCRαβ+ and NK cells along with stem cells using novel graft processing technique reduces these risks significantly and improves immune reconstitution and hence the outcomes of such transplants. TCRαβ+ Haploidential transplants are standard of care in UK and some European countries when an HLA-matched donor is not available; however, this modality is not routinely available in Canada.

METHODS AND RESULTS: Depletion protocol using an immuno-magnetic method (CliniMACs device) was adopted in Calgary as per manufacture recommendation (Miltenyi Biotec, Bergisch Gladbach, Germany) and with the help of Newcastle, UK cell therapy laboratory. Recommend target TCR αβ+ and B cell dose in graft post depletion was 1x10⁴/5/kg recipient weight. Reduced toxicity myeloablative conditioning protocol was used as per published experience. The first αβ+TCR depleted HSCT was performed successfully in Canada.
Incidence of anicteric Veno-Occlusive Disease/Sinusoidal Obstruction Syndrome (VOD/SOS) and Defibrotide Efficacy Following Hematopoietic Cell Transplantation (HCT)

Selim Corbacioglu,1 Nancy Kernan,2 Antonio Pagliuca,3 Maya Isaila,4 Robert J. Ryan,5 William Tappe,5 Paul G. Richardson6

1University of Regensburg, Regensburg, Germany; 2Memorial Sloan Kettering Cancer Center, New York, NY, USA; 3King’s College Hospital, London, United Kingdom; 4Jazz Pharmaceuticals, Oakville, ON, Canada; 5Jazz Pharmaceuticals, Palo Alto, CA, USA; 6Jerome Lipper Multiple Myeloma Center, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, USA.

Objective: To examine the incidence of VOD/SOS without elevated bilirubin, before and after Day 21 post-HCT, and survival in patients in the defibrotide expanded-access program (T-IND).

Rationale: Hepatic VOD/SOS is a progressive, potentially life-threatening complication of HCT. Among traditional VOD/SOS diagnostic criteria, bilirubin >2 mg/dL is only required for the Baltimore criteria; hyperbilirubinemia is not required by the modified Seattle criteria and may appear late in the progression of VOD/SOS. Defibrotide is approved for hepatic VOD/SOS with renal or pulmonary dysfunction post-HCT in the US and Canada, and for severe hepatic VOD/SOS post-HCT in patients aged >1 month in the EU.

Methodology: The original T-IND protocol required post-HCT diagnosis of VOD/SOS per Baltimore criteria or biopsy; the protocol was later amended to allow diagnosis using modified Seattle criteria. Patients received defibrotide 25 mg/kg/day, recommended for ≥21 days.

Results: Of 991 post-HCT patients in T-IND with recorded bilirubin level at diagnosis, 190 (19%) had bilirubin <2 mg/dL (n = 135 [71%] diagnosed with VOD/SOS by Day 21 post-HCT; n = 55 [29%] diagnosed after Day 21); 133 were aged ≤16 years and 57 were aged >16 years. The figure shows survival by bilirubin level and age group. Across all 1,000 post-HCT patients in the T-IND, Kaplan-Meier’s estimated Day 100 survival was 58.9% (95% CI: 55.7%-61.9%). Kaplan-Meier’s estimated Day 100 survival was 85.6% (95% CI: 79.7%-89.9%) for 190 patients with bilirubin <2 mg/dL at diagnosis and 52.3% (95% CI: 48.7%-55.7%) for 801 patients with bilirubin ≥2 mg/dL. Among patients with bilirubin <2 mg/dL, 61.1% had ≥1 treatment-emergent adverse event (TEAE), 18.4% had ≥1 treatment-related AE (TRAЕ), and 2019

Calgary, AB • June 5–8, 2019

Annual Conference of Cell Therapy and Transplant Canada

Scientific Program

P23. Incidence of anicteric Veno-Occlusive Disease/Sinusoidal Obstruction Syndrome (VOD/SOS) and Defibrotide Efficacy Following Hematopoietic Cell Transplantation (HCT)

Selim Corbacioglu,1 Nancy Kernan,2 Antonio Pagliuca,3 Maya Isaila,4 Robert J. Ryan,5 William Tappe,5 Paul G. Richardson6

1University of Regensburg, Regensburg, Germany; 2Memorial Sloan Kettering Cancer Center, New York, NY, USA; 3King’s College Hospital, London, United Kingdom; 4Jazz Pharmaceuticals, Oakville, ON, Canada; 5Jazz Pharmaceuticals, Palo Alto, CA, USA; 6Jerome Lipper Multiple Myeloma Center, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, USA.

Objective: To examine the incidence of VOD/SOS without elevated bilirubin, before and after Day 21 post-HCT, and survival in patients in the defibrotide expanded-access program (T-IND).

Rationale: Hepatic VOD/SOS is a progressive, potentially life-threatening complication of HCT. Among traditional VOD/SOS diagnostic criteria, bilirubin >2 mg/dL is only required for the Baltimore criteria; hyperbilirubinemia is not required by the modified Seattle criteria and may appear late in the progression of VOD/SOS. Defibrotide is approved for hepatic VOD/SOS with renal or pulmonary dysfunction post-HCT in the US and Canada, and for severe hepatic VOD/SOS post-HCT in patients aged >1 month in the EU.

Methodology: The original T-IND protocol required post-HCT diagnosis of VOD/SOS per Baltimore criteria or biopsy; the protocol was later amended to allow diagnosis using modified Seattle criteria. Patients received defibrotide 25 mg/kg/day, recommended for ≥21 days.

Results: Of 991 post-HCT patients in T-IND with recorded bilirubin level at diagnosis, 190 (19%) had bilirubin <2 mg/dL (n = 135 [71%] diagnosed with VOD/SOS by Day 21 post-HCT; n = 55 [29%] diagnosed after Day 21); 133 were aged ≤16 years and 57 were aged >16 years. The figure shows survival by bilirubin level and age group. Across all 1,000 post-HCT patients in the T-IND, Kaplan-Meier’s estimated Day 100 survival was 58.9% (95% CI: 55.7%-61.9%). Kaplan-Meier’s estimated Day 100 survival was 85.6% (95% CI: 79.7%-89.9%) for 190 patients with bilirubin <2 mg/dL at diagnosis and 52.3% (95% CI: 48.7%-55.7%) for 801 patients with bilirubin ≥2 mg/dL. Among patients with bilirubin <2 mg/dL, 61.1% had ≥1 treatment-emergent adverse event (TEAE), 18.4% had ≥1 treatment-related AE (TRAЕ), and
21.1% had ≥1 hemorrhage event. For patients with bilirubin ≥2 mg/dL: 73.8% had ≥1 TEAE, 21.7% had ≥1 TRAE, and 31.1% had ≥1 hemorrhage event.

CONCLUSIONS: These data indicate diagnosis of VOD/SOS would have been missed in 19% of patients (24% of children, 13% of adults) if hyperbilirubinemia was required (ie, Baltimore criteria). Longer survival was observed in patients receiving defibrotide who had bilirubin <2 mg/dL versus ≥2 mg/dL, overall and by age group. These results compare favorably with the overall study findings, suggesting treatment before hyperbilirubinemia onset may lead to better outcomes.

P24. POOLED ANALYSIS OF TIME TO COMPLETE RESPONSE AFTER DEFIBROTIDE INITIATION IN PATIENTS WITH HEPATIC VENO-OCCCLUSIVE DISEASE/ SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) AFTER HEMATOPOIETIC CELL TRANSPLANTATION (HCT)

Paul G. Richardson,1 Angela R. Smith,2 Nancy A. Kernan,3 Leslie Lehmann,4 Maya Isaila,5 Robert J. Ryan,6 William Tappe,6 Stephan A. Grupp7

1Jerome Lipper Multiple Myeloma Center, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, USA; 2University of Minnesota, Minneapolis, MN, USA; 3Memorial Sloan Kettering Cancer Center, New York, NY, USA; 4Center for Stem Cell Transplantation, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA, USA; 5Jazz Pharmaceuticals, Oakville, On, Canada; 6Jazz Pharmaceuticals, Palo Alto, CA, USA; 7The Children’s Hospital of Philadelphia, Philadelphia, PA, USA.

OBJECTIVE: To examine time to complete response (CR) of VOD/SOS and multi-organ dysfunction (MOD) symptoms relative to day of defibrotide initiation in patients (pts) who received defibrotide 25 mg/kg/day.

RATIONALE: Mortality associated with hepatic VOD/SOS with MOD has been reported to be >80%. Defibrotide is approved for hepatic VOD/SOS with renal or pulmonary dysfunction post-HCT in the US and Canada, and for severe hepatic VOD/SOS post-HCT in pts aged >1 month in the EU. Per prescribing guidelines, defibrotide 25 mg/kg/day is recommended for ≥21 days; however, the time to CR across studies has not been evaluated.

METHODOLOGY: Time to CR and safety data were pooled from 2 studies that included pts with VOD/SOS and MOD post-HCT who were treated with defibrotide: a phase 2, randomized dose-finding study (n = 74 receiving 25 mg/kg/day) and a phase 3 study (n = 102). Duration of therapy in pts who discontinued due to CR in an expanded-access program (T-IND) in VOD/SOS pts with and without MOD post-HCT (n = 1,000) was analyzed separately due to differences in the pt population and the assessment of response. VOD/SOS diagnosis was defined by Baltimore criteria/biopsy for the phase 2 and 3 studies; in T-IND, modified Seattle criteria were also permitted.

RESULTS: The pooled phase 2 and 3 studies had 60 pts with CR (n = 34 and n = 26, respectively) and 116 pts without CR (n = 40 and n = 76, respectively). Among the 60 pts with CR (Figure) in the phase
2 and 3 studies, the median time to CR was 24.5 days (range: 7-123); of these, 40% required >4 weeks of persistent treatment to achieve CR. In T-IND, 390 pts discontinued treatment due to CR (median time to discontinuation was 22 days; range: 2-64), with 57 (14.6%) pts discontinuing after >4 weeks of treatment. In the phase 2 and 3 studies (n = 176), 58 (33%) pts had treatment-related adverse events (TRAEs); the most common were hypotension (5.7%), pulmonary alveolar hemorrhage (5.7%), epistaxis (4.5%), and gastrointestinal hemorrhage (4.0%). In T-IND (n = 1,000), 210 (21.0%) pts had ≥1 TRAE; most common were pulmonary hemorrhage (4.6%), gastrointestinal hemorrhage (3.0%), epistaxis (2.3%), and hypotension (2.0%).

CONCLUSIONS: Among pts with CR, a notable proportion required >4 weeks of persistent treatment to achieve CR (phase 2/3: 40%) or discontinue due to CR (T-IND: 14.6%), highlighting the importance of continued therapy as originally proposed in prior studies and indicated in the current label.

P25. DEFIBROTIDE COST-EFFECTIVENESS IN CANADA FOR THE TREATMENT OF VENO-OCCULUSIVE DISEASE/SINUSOIDAL OBSTRUCTION SYNDROME (VOD/SOS) WITH MULTI-ORGAN DYSFUNCTION (MOD) AFTER HEMATOPOIETIC CELL TRANSPLANTATION (HCT)

Jonathan Belsey,1 Eric Ngonga Kemadjou,1 Maya Isaila,2 Kathleen F. Villa3

1JB Medical Ltd, Sudbury, United Kingdom; 2Jazz Pharmaceuticals, Oakville, ON, Canada; 3Jazz Pharmaceuticals, Palo Alto, CA, USA.

OBJECTIVE: To evaluate the cost-effectiveness of defibrotide versus best supportive care (BSC) in patients with VOD/SOS with MOD post-HCT in Canada.

RATIONALE: Mortality associated with hepatic VOD/SOS with MOD has been reported to be >80%. Defibrotide is approved for hepatic VOD/SOS with renal or pulmonary dysfunction post-HCT in the US and Canada, and for severe hepatic VOD/SOS post-HCT in patients aged >1 month in the EU. However, the cost-effectiveness of defibrotide has not been evaluated in Canada.

METHODOLOGY: A Markov cost-utility model, with an acute phase, long-term phase, and lifetime horizon, was adapted to reflect Canadian experience regarding epidemiology, management costs, and survival expectancy; only direct medical costs were included. In the acute phase, transition probabilities were based on Day 100 survival and complete response (CR) from a phase 3 trial. The model included 4 health states: severe VOD/SOS, CR, survival, and death. Survival in the long-term phase was extrapolated using data from the literature. Hospital costs were calculated by taking the difference in time to CR in each arm to estimate the expected difference in hospital days between arms. The severe VOD/SOS utility value was assumed to be the same as acute liver failure and end-stage liver disease scores (0.208) per key opinion leader input; CR utility was set to the age-matched general population. Costs and outcomes were discounted at 1.5% per year according to government guidance. Health effects were primarily expressed as quality-adjusted life years (QALYs).

RESULTS: The difference in estimated costs between defibrotide and BSC was $27,396 Canadian dollars (Table). There was a 1.5 QALY increase for defibrotide versus BSC. The incremental cost-effectiveness ratio (ICER; cost per QALY gained) was $17,724. In the probabilistic sensitivity analysis, for a willingness to pay of $30,000
and $50,000 per QALY gained, the probabilities of defibrotide being cost-effective were 85.6% and 100%, respectively (Figure).

CONCLUSIONS: These results suggest defibrotide for VOD/SOS with MOD is a cost-effective use of health resources in Canada, with an estimated ICER versus BSC below the accepted threshold for willingness to pay. Analysis limitations include longer-term extrapolation of clinical data and assumptions about resource utilization patterns. Results were driven by estimates of more rapid recovery, reduced length of stay, and improved Day 100 survival with defibrotide.

Table. Cost-Utility Base Case Results

<table>
<thead>
<tr>
<th></th>
<th>Defibrotide*</th>
<th>BSC</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost (Canadian dollars)</td>
<td>$136,089</td>
<td>$182,692</td>
<td>$46,603</td>
</tr>
<tr>
<td>QALYs</td>
<td>5.66</td>
<td>4.42</td>
<td>1.24</td>
</tr>
<tr>
<td>ICER (cost/QALY)</td>
<td>$27,396</td>
<td>$17,724</td>
<td></td>
</tr>
</tbody>
</table>

CONCLUSIONS: These results suggest defibrotide for VOD/SOS with MOD is a cost-effective use of health resources in Canada, with an estimated ICER versus BSC below the accepted threshold for willingness to pay. Analysis limitations include longer-term extrapolation of clinical data and assumptions about resource utilization patterns. Results were driven by estimates of more rapid recovery, reduced length of stay, and improved Day 100 survival with defibrotide.

P26. OUTCOMES OF ALLOGENIC HSCT IN CHILDREN WITH SEVERE APLASTIC ANEMIA USING FLUDARABINE, ALEMTUZUMAB AND LOW DOSE CYCLOPHOSPHAMIDE BASED CONDITIONING REGIMEN: CALGARY EXPERIENCE

Shah RM, Truong T, Desai S, Guilcher G, Prokopishyn N, Lewis V

BACKGROUND: Idiopathic Aplastic Anemia (AA) is a common cause of bone marrow failure which is usually managed by immune suppressive therapy or HLA-matched allogenic hematopoietic stem cell transplantation (HSCT). Since bone marrow is already hypocellular, reduced intensity conditioning protocols with intermediate or high dose cyclophosphamide (dose >100mg/kg) are commonly used for HSCT where cyclophosphamide serves as immune ablative function. We currently use low dose cyclophosphamide (cumulative dose 1200mg/m² or “30mg/kg), fludarabine (120mg/m²) and alemtuzumab (0.6-1.0 mg/kg) or rabbit ATG (15.5mg/kg) conditioning for transplanting children with AA. Low dose total body irradiation is added for unrelated donor HSCT.

Patients: 21 children (12 boys, 9 girls) with AA underwent allogenic stem cell transplantation over last 7 years in Alberta Children Hospital. The graft source was matched sibling or related (10), matched unrelated (8) and mismatched unrelated (3) donors.

RESULTS: We report 2-year EFS and OS of 94.4±5.4% and 100% respectively. The event was defined as a graft failure or death. Median follow-up of whole cohort is 1.31 years. Three (14.2%) patients developed secondary graft failure with 2/3 being late failures (>3-year post transplant). The GVHD incidences are low and 19% patients developed grade I/II skin only GVHD. There are no cases of chronic GVHD till date. None of the patients developed veno-occlusive disease or hemorrhagic cystitis. 33.3% patients developed viral reactivation/infection post-HSCT and were successfully treated.

CONCLUSION: Addition of pan-lymphodepleting agent (alemtuzumab) with low dose TBI allows reduction of cyclophosphamide dose and can reduce immediate and late cyclophosphamide related toxicities. The survival is excellent and the graft failure rate is acceptable but requires further investigations as conditioning protocol using intermediate or higher dose of cyclophosphamide (>100mg/kg) reports 0% graft failure rates.

P27. COMING HOME: A POST BONE MARROW TRANSPLANT PROGRAM AT A CENTRE THAT REFERS PATIENTS OUT FOR TRANSPLANT

Jessica Dunn MD¹, Kay Blyth RN², Mylene Bassal MDCM², Lesleigh S. Abbott MD²

¹Division of Infectious Disease, The Children’s Hospital of Eastern Ontario, Ottawa, Ontario, Canada; ²Division of Hematology/Oncology, The Children’s Hospital of Eastern Ontario, Ottawa, Ontario, Canada

INTRODUCTION: Allogenic hematopoietic stem cell transplantation (aHSCT) is a centralized service in Canada because of the multidisciplinary expertise and facilities needed to deliver this specialized
care. Thus many patients are traveling and relocating their home city and established local caregivers. The reality is aHSCT is a journey and transplant-related care needs continue for months and years after the children return to their home centers. For larger referring programs such as ours, many children return to their home hospital with active transplant issues. At the Children's Hospital of Eastern Ontario (CHEO), patients requiring aHSCT are referred to either The Hospital for Sick Children (HSC) or CHU Sainte-Justine (CHUSJ). In response to providing further services to these patients and their complex needs, we have designed a multi-disciplinary subspecialty clinic allowing patients to safely return home post-aHSCT for follow-up care.

Main Thesis: We describe the clinical program for follow-up of patients after aHSCT at CHEO.

SUMMARY: We have followed 43 patients post-aHSCT (27 patients with malignant, 16 with non-malignant indications) over the past 4 years. There are 6-12 patients undergoing aHSCT per year. Through advocacy at our own institution and in partnership with the transplant centers, we have developed a streamlined process for patients based on the following principles: 1) Clear methods of communication between CHEO and the transplant centers; 2) Setting expectations with families for pre- and post-aHSCT care; 3) Routine monitoring and follow-up for post-aHSCT complications; 4) Dedicated post-aHSCT nurse case manager; 5) Infectious Disease physician involved pre and post-aHSCT; 6) Allied health involvement: pharmacist, dietician, and social worker; 7) Strategies to manage urgent transplant related complications. Some practice differences between the two referral centres has resulted in the development of our own institution's guidelines. For example: infection prevention and control practices and re-immunization schedule. Benefits of our model of care include: family satisfaction with returning to a familiar environment at home hospital and expanding aHSCT expertise at a non-transplant center.

CONCLUSIONS: We have created a program for post-aHSCT patients to receive appropriate follow-up care closer to home. Our multi-disciplinary, shared care model allows for optimal, family-centred care.

P28. PORTRAYAL OF UMBILICAL CORD BLOOD RESEARCH IN THE NORTH AMERICAN POPULAR PRESS: PROMISE OR HYPE?

Alessandro Marcon, Morgan Barber, MHA, David Allan, MD, Blake Murdoch, MBA, JD, Timothy Caulfield, LLM

INTRODUCTION: In North America, umbilical cord blood (UCB) stands as a substantial source of regenerative cells for numerous clinical applications. Progenitor cells, including hematopoietic progenitor cells (HPCs) and mesenchymal stem cells (MSCs) have demonstrated potential to be used in the treatment of various diseases. UCB also maintains a significant role in established allogeneic transplantation. Recent clinical trials, however, have been conducted assessing the use of UCB to treat new indications, for example, Alzheimer disease, autism, cerebral palsy, diabetes, liver failure, stroke, spinal cord injury, malignant solid tumors, osteoporosis, and neurological diseases. As studies progress towards distinguishing proven treatments from experimental and disproven ones, questions remain as to how these findings and distinctions are translated to the general public. The goal of this research has been to map out how UCB has been portrayed in popular North American newspapers.

SUMMARY: A dataset of 400 relevant, non-duplicate newspaper articles published from 2007-2017 was assembled using the FACTIVA news database. A coding frame was then developed in order to conduct content analysis. The general objective was to identify whether gaps existed between the popular press coverage of UCB therapies and what the clinical evidence shows. This included mapping out which therapies were highlighted and whether these were portrayed as potentially beneficial or whether risks, concerns or limitations where also discussed. Initial findings show articles detailing the benefits for some therapies proving to be efficacious in the clinic setting (e.g. leukemia and in transplantation) but also the detailing and promoting of speculative treatments at very early research stages, including cerebral palsy, diabetes, autism, stroke and spinal cord injuries. As such, the portrayal of UCB in the popular press shows signs of detailing promising scientific developments while also “hyping” (exaggerating or promoting) more speculative and uncertain therapies. Ongoing analysis will further detail the manner in which this is occurring.

CONCLUSIONS: With the increase in stem cell clinics offering
speculative therapies worldwide, it is valuable for Canadian patients to know which therapies remain experimental or unproven. This media analysis shows that the media portrayal on UCB related therapies might not be ideal.

P29. INCIDENCE OF HEPATIC VENO-OCCCLUSIVE DISEASE (VOD) IN QUEBEC, CANADA

Royer C., PeriPharm, Montreal, Quebec, Canada Gilchrist S.E., Jazz Pharmaceuticals Canada Isaila M., Jazz Pharmaceuticals Canada

INTRODUCTION: Hepatic veno-occlusive disease (VOD), also known as hepatic sinusoidal obstruction syndrome, is a life-threatening complication following hematopoietic stem cell transplantation (HSCT). VOD usually occurs within the first 21 days following HSCT, but can also occur beyond that timeframe and be categorized as late-onset. Severe VOD (sVOD)- VOD associated with multi-organ dysfunction (MOD) has a mortality rate exceeding 80% (Coppel JA, 2010). The incidence of VOD in Canada is not well documented.

Purpose: The objective of this study was to evaluate the incidence of VOD and sVOD in patients who had undergone a HSCT in Canada.

METHODS: This was a retrospective study using the Quebec public health insurance plan (RAMQ) database. The cohort consisted of patients who have undergone a HSCT between June 2008 and December 2017. Using an ICD-9 code algorithm based in part on the method described by Cao et al, VOD was identified in patients with at least one diagnosis code indicating hepatic or thromboembolic disease. Patients with sVOD were identified by at least one diagnosis code related to multi-organ dysfunction.

RESULTS: A total of 1,053 HSCT patients were identified [89.7% (n=945), 9.5% (n=100) and 0.8% (n=8) undergoing 1, 2, or 3 HSCTs respectively]. Forty nine patients (4.7%) met criteria for VOD, with an average age of 46.4 years and a 57.1% male preponderance. Of these, 43 (87.8%) were classified as sVOD.

CONCLUSION: The incidence of VOD among those who had received HSCT between 2008 and 2017 is estimated to be 4.7% in Quebec, according to an analysis of the RAMQ database. The majority of VOD cases (87.8%) were sVOD as suggested by the presence of codes for organ dysfunction.

P30. DEVELOPMENT OF A WHITEBOARD VIDEO TO SUPPORT THE EDUCATION AND RECRUITMENT OF UNRELATED DONORS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATION

Edward W. Li (Stem Cell Club; McMaster University, Hamilton ON), Anna Lee (Stem Cell Club; McMaster University, Hamilton ON), Maryam Vaseghi-Shanjani (Stem Cell Club; McMaster University, Hamilton ON), Alexander Anagopoulos (Stem Cell Club; McMaster University, Hamilton ON), Gabriele Jagelaviciute (Stem Cell Club; Western University, London ON), Elena Kum (Stem Cell Club; Western University, London ON), Tanya Petraszko (Canadian Blood Services; University of British Columbia, Vancouver BC), David Allan (University of Ottawa; The Ottawa Hospital; Ottawa Hospital Research Institute, Ottawa ON), Warren Fingrut (Stem Cell Club; University of British Columbia, Vancouver BC)

INTRODUCTION: Patients with a variety of blood diseases may require a hematopoietic stem cell transplant as part of their treatment. However, over 70% of patients do not have a suitable genetic match in their family, and require an unrelated donor. A needs assessment survey performed in February 2017 with 76 donor recruiters across Canada identified the need for online videos to support the education and recruitment of unrelated donors. Here, we describe the development of whiteboard videos to meet this need.

METHODS: We designed a whiteboard animation video series outlining the rationale for stem cell transplantation; principles of donor-recipient matching; donor registration process; and methods of donation. The script and storyboard were reviewed for accuracy by transplantation experts and for appeal by target donor demographics. An artist and videographer were retained to produce the videos. In February 2019, we emailed a survey to 65 donor recruiters across Canada to elicit feedback on the videos. Survey questions employed five-point Likert scales.

RESULTS: One long (209s) and four short (56-92s) whiteboard videos were developed. Scenes depict a patient who needs a transplant, surrounded by family; an individual registering as a donor; and donors undergoing collection of stem cells from blood and bone marrow. Metaphorical interpretations of stem cells as factories and genetic markers as barcode labels are used to communicate complex scientific concepts. The particular need for young, male, and ethnically diverse donors is reflected in the characters portrayed. The videos were published online in September 2018 to www.stemcellclub.ca/
As of February 2019, the videos had 5,070 views across social media. The post-publication feedback survey was completed by 34 donor recruiters from 14 cities in 7 provinces across Canada. Participants reported a median of 2.5 years’ experience in donor recruitment. 58% had already used this resource, and 89% reported they will use it in the future. The majority agreed or strongly agreed that the videos will help raise awareness about stem cell donation (100%), help educate potential donors (100%), and help recruit the most-needed donors (82%).

**CONCLUSION:** We have developed a whiteboard video to support the education and recruitment of unrelated stem cell donors. Our work is relevant and accessible to a wide audience. Future work will evaluate quantitative and qualitative feedback from potential donors.

---

**P31. DEVELOPMENT OF AN INFOGRAPHIC TO SUPPORT THE EDUCATION AND RECRUITMENT OF UNRELATED DONORS FOR HEMATOPOIETIC STEM CELL TRANSPLANTATION**

_Elena Kum (Stem Cell Club; Western University, London ON), Michelle Ho (Stem Cell Club; Western University, London ON), Warren Fingrut (Stem Cell Club; University of British Columbia, Vancouver BC)_

**INTRODUCTION:** Unrelated stem cell donors are recruited either online or at stem cell drives where recruiters guide registrants to provide informed consent and a tissue sample for typing. A needs assessment survey performed in 02/2017 with 76 donor recruiters across Canada identified the need for infographics to support the education and recruitment of unrelated donors. We present the development of an infographic to meet this need, and a summary of recruiters’ feedback on its utility.
METHODS: We set out to design a shareable infographic outlining 1) the purpose of stem cell transplantation; 2) the patients who need a stem cell transplant; 3) the difficulty of finding a match; 4) the need for male and ethnically-diverse donors; and 5) the steps to register as a donor. The infographic was reviewed for accuracy by transplantation experts. One-year post-publication, we emailed a survey to 65 donor recruiters across Canada to elicit feedback on the infographic.

RESULTS: The infographic shows a human body and the locations blood stem cells are found. These stem cells are shown maturing into differentiated blood cells. A circular arrangement lists diseases that can be treated with stem cell transplantation. Blood drops are employed as pie charts, outlining the proportion of patients who need an unrelated donor and who cannot find one on Canada’s donor registry. Stick figures illustrate the ethnic and gender composition of Canada’s donor registry, highlighting the underrepresentation of most-needed donor groups. A flow chart walks through how to register as a stem cell donor. The infographic was published on 11/2017 to http://stemcellclub.ca/promo.html. 34 donor recruiters from 7 provinces and with a median of 2.5 years of experience participated in the feedback survey. 41% had already used this resource, and all reported that they will use it in the future. The majority agreed or strongly agreed that the resource will help raise awareness about stem cell donation (100%), educate potential stem cell donors (91%), and help recruit the most-needed donors (79%). 85% felt more infographics are needed, proposing less dense infographics on topics such as the need for ethnically-diverse donors and success stories in stem cell donation.

CONCLUSION: We developed an infographic to support the education and recruitment of stem cell donors, and demonstrated its utility from the recruiter perspective. Recruiter feedback will guide development of future infographics.
P32. Stakeholder Perspective on the Development of a Library of Stem Cell Donation Stories

Gabriele Jagelaviciute1,2, Elena Kum1,2, Eduard W. Li3,4, Kenneth Williams1,3, Adriyan Hrycyszyn1,2, Santhosh Thyagu1, and Warren Fingrut1,5

1Stem Cell Club; 2Faculty of Science, Western University, Canada; 3Faculty of Medicine, University of Toronto, Canada; 4Faculty of Health Sciences, McMaster University, Canada; 5Faculty of Medicine, University of British Columbia, Canada

INTRODUCTION: Storytelling is an important tool to convey information. We hypothesized that development of a library of stories related to stem cell donation in Canada would support efforts to recruit unrelated donors, as few stories featuring Canadians are easily available online. We conducted surveys to learn the perspectives of stakeholders in donor recruitment on the need for a library of stories.

METHODS: We conducted two needs assessment surveys in February 2019. First, we invited 65 donor recruiters across Canada to participate in a survey via email, to learn their opinions on the proposed resource. Second, we invited newly registered stem cell donors to participate in a paper survey following a stem cell drive at Western University. This survey asked participants whether seeing stories would impact their knowledge and interest in stem cell donation and their decision to register or donate. Both surveys displayed an example story and employed five-point Likert scales.

RESULTS: The survey of donor recruiters included 34 participants from 14 cities in 7 provinces across Canada, with a median of 2.5 years’ experience in donor recruitment. The majority strongly agreed or agreed that an online and shareable library of stories would help raise awareness about stem cell donation (97%), educate potential donors (100%), and recruit the most needed donors (88%). Participants felt this library should include recipients (100%) and donors (97%) of patients (91%), transplant staff (73%), and ethnically-diverse storytellers (91%). The survey of newly registered stem cell donors included 50 participants, reflecting a 83% survey completion rate. 52% were male (54% of males were ethnically-diverse). 84% of participants strongly agreed or agreed that stories would help them understand stem cell donation and the need for donors from different ethnic backgrounds. 88% felt that seeing stories ahead of drives would make them more willing to register or donate stem cells. 60% would share these stories on social media ahead of drives. 80% would be interested in reading future stories like these.

CONCLUSION: These data highlight the perspectives of donor recruiters and newly registered donors that a library of stories in stem cell donation is needed and could be used as a tool to support the education and recruitment of unrelated donors. These results will inform efforts to develop this resource.

P33. Induction Chemotherapy and Allogeneic Hematopoietic Stem Cell Transplantation is a Feasible Treatment Option in Older Adults with Acute Myeloid Leukemia: Real-World Outcomes


Leukemia/BMT Program of BC, BC Cancer, University of British Columbia, British Columbia, Canada

INTRODUCTION: Acute myeloid leukemia (AML) occurs most frequently in older adults (>60yrs), however fewer older patients get induction chemotherapy (IC) (1). Trials have shown IC and allogeneic stem cell transplantation (Allo-SCT) improves outcomes in selected older patients (2-5). We reviewed outcomes of older adults treated with IC and allo-SCT in a population-based cohort in British Columbia (BC), Canada.

METHODS: Patients with ICD-10 code diagnoses of AML were identified from the BC Cancer population registry. Inclusion criteria were: Diagnosis between 2010-2016, clinical or pathologic AML diagnosis, age >=60yrs at diagnosis. Exclusion criteria were: APL diagnosis or treatment outside BC. Differences were assessed by Chi-square or t¬-test, overall survival (OS) by Kaplan-Meier.

RESULTS: We identified 879 patients. Fewer patients were treated by IC (151, 17.1%) vs non-IC treatments (728, 82.8%). IC patients had a lower median age (64.3yrs, range 60.1–72.4yrs ) vs non-IC (77.6yrs, range 60.0-98.8yrs) (p<0.001). Over half of patients achieved complete remission with IC (83, 55.0%) with few dying within 30 days of IC (7, 4.6%). A minority of patients receiving IC proceeded to allo-SCT (39, 4.4%), with no patients >70yrs receiving allo-SCT. Median age (62.5yrs, range 60.0 - 69.0yrs) was younger than the overall IC group (p<0.001). Donor types included sibling (21, 53.8%), 10/10 volunteer unrelated donor (VUD) (15, 38.5%), and 9/10 VUD (3, 7.7%). Conditioning included myeloablative (MAC,busulfan/cyclophosphamide)
(18.46.2%) and reduced intensity conditioning (RIC, busulfan/fludara- bine) (21.53.8%). Adverse cytogenetics predicted worse OS for pa- tients receiving IC alone (p < 0.001) but not with allo-SCT (p = 0.338). OS was not impacted by donor type (p = 0.154) or conditioning (p = 0.571). Allo-SCT non-relapse mortality (NRM) was low (4, 10.3%). Median OS was better in the allo-SCT group (RIC 31.9mo, 95%CI 23.5-40.2mo, 3yr OS 43.6%, MAC median OS NR, 3yr OS 61.1%) vs IC only (11.0mo, 95%CI 9.0-13.1mo, 3yr OS 11.2%) (p < 0.001).

**Table 1. Baseline Patient Characteristics**

<table>
<thead>
<tr>
<th></th>
<th>Non-Induction</th>
<th>Induction Chemotherapy</th>
<th>Allogeneic SCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N = 879</td>
<td>N = 728</td>
<td>N = 151</td>
<td>N = 39</td>
</tr>
<tr>
<td>Median</td>
<td>77.6 years</td>
<td>64.3 years</td>
<td>62.5 years</td>
</tr>
<tr>
<td>Range</td>
<td>60.0 - 98.8</td>
<td>60.1 - 72.4 years</td>
<td>60.0 - 69.0 years</td>
</tr>
<tr>
<td>Sex</td>
<td>M = 431 (59.2)</td>
<td>F = 297 (40.8)</td>
<td>M = 95 (62.9%)</td>
</tr>
<tr>
<td></td>
<td>F = 297 (40.8)</td>
<td>M = 95 (62.9%)</td>
<td>F = 14 (35.9%)</td>
</tr>
<tr>
<td>Median BM Blast Count (Range)</td>
<td>45.0% (20 -100%)</td>
<td>62.5% (20 - 100%)</td>
<td>62.0% (20 - 90%)</td>
</tr>
<tr>
<td>AML MRC</td>
<td>272 (37.4%)</td>
<td>39 (25.8%)</td>
<td>9 (23.1%)</td>
</tr>
<tr>
<td>Cytogenetics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Favourable</td>
<td>7 (1%)</td>
<td>7 (4.6%)</td>
<td>1 (2.6%)</td>
</tr>
<tr>
<td>Intermediate</td>
<td>232 (31.9%)</td>
<td>114 (75.5%)</td>
<td>30 (76.9%)</td>
</tr>
<tr>
<td>Adverse</td>
<td>158 (21.7%)</td>
<td>23 (15.2%)</td>
<td>6 (15.4%)</td>
</tr>
<tr>
<td>Not available</td>
<td>331 (45.5%)</td>
<td>7 (4.6%)</td>
<td>2 (5.1%)</td>
</tr>
<tr>
<td>NPM1 Positive</td>
<td>16 (2.2%)</td>
<td>42 (27.8%)</td>
<td>7 (17.9%)</td>
</tr>
<tr>
<td>Molecular</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLT3-ITD Positive</td>
<td>6 (0.8%)</td>
<td>23 (15.2%)</td>
<td>8 (20.5%)</td>
</tr>
<tr>
<td>Not available</td>
<td>690 (94.8%)</td>
<td>62 (41.1%)</td>
<td>15 (38.5%)</td>
</tr>
</tbody>
</table>

**Table 2. Treatments and Outcomes**

<table>
<thead>
<tr>
<th></th>
<th>Non-Induction</th>
<th>Induction Chemotherapy</th>
<th>Allogeneic SCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N = 879</td>
<td>N = 728</td>
<td>N = 151</td>
<td>N = 39</td>
</tr>
<tr>
<td>Upfront Treatment &amp; Outcomes</td>
<td>Aza or LDAC 196 (26.9%)</td>
<td>Induction Failure 57 (37.7%)</td>
<td>9/10 VUD 4 (2.6%)</td>
</tr>
<tr>
<td></td>
<td>Best Supportive Care 532 (73.1%)</td>
<td>Death 4 (2.6%)</td>
<td>MA 18 (46.2%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRI</td>
<td>83 (55.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donor</td>
<td>10/10 VUD 15 (38.5%)</td>
<td>3 (7.7%)</td>
<td></td>
</tr>
<tr>
<td>Conditioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RIC</td>
<td></td>
<td></td>
<td>21 (53.8%)</td>
</tr>
<tr>
<td>NRM</td>
<td></td>
<td></td>
<td>4 (10.3%)</td>
</tr>
<tr>
<td>Number Decreased</td>
<td>706 (97.0%)</td>
<td>117 (77.5%)</td>
<td>17 (43.6%)</td>
</tr>
<tr>
<td>Median Overall Survival (95% CI)</td>
<td>2.4 mo (2.0 - 2.8 mo)</td>
<td>11.0 mo (9.0 - 13.1 mo)</td>
<td>RIC; 31.9 mo (23.5 - 40.2 mo) / MA: NR</td>
</tr>
<tr>
<td>Median Follow-up (95% CI)</td>
<td>37.7 mo (32.0 - 43.3 mo)</td>
<td>45.3 mo (35.5 - 55.0 mo)</td>
<td>42.5 mo (30.1 - 55.0 mo)</td>
</tr>
</tbody>
</table>

**CONCLUSIONS:** Treatment of selected older adults with AML IC and allo-SCT was associated with improved OS and NRM. A significant difference with respect to OS was not observed between donor types or RIC vs MAC conditioning, and NRM was low. Our real-world, population-level data supports that fit, older patients should be considered for intensive therapy and allo-SCT.

**References:**
P34. ARE WE CHOOSING MOBILIZATION REGIMENS FOR AUTOLOGOUS STEM CELL TRANSPLANTATION IN MULTIPLE MYELOMA WISELY? A SINGLE CENTRE COMPARISON OF GCSF+/−PLERIXAFOR VS CYCLOPHOSPHAMIDE/GCSF+/−PLERIXAFOR

Chloe Yang (Queen’s University Division of Hematology), Mina Dehghani Mohammadabadi (Queen’s University Division of General Internal Medicine) Wilma Hopman (Kingston General Hospital Research Institute) Sita Bhella (Queen’s University Division of Hematology)

BACKGROUND: Multiple strategies are employed for mobilization of stem cells in autologous stem cell transplantation (ASCT). Cyclophosphamide/GCSF is an effective standard regimen, although there are reported toxicities associated with cyclophosphamide. Since Plerixafor was introduced in Canada, this mobilization agent has been increasingly used with GCSF at Kingston Health Science Centre (KHSC), with elimination of cyclophosphamide. This retrospective review evaluates ASCT outcomes of multiple myeloma (MM) patients who had undergone stem cell mobilization with GCSF+/−plerixafor (G) vs cyclophosphamide/GCSF+/−plerixafor (CyG) at KHSC.

Method: Patient with MM who had ASCT at KHSC were selected consecutively based on date of ASCT in a reverse chronological order starting from Jan 2019. Retrospective chart review was conducted to collect demographics, plerixafor use, days of apheresis, total cell collected, rate of febrile neutropenia (FN), length of transplant hospital stay, time to engraftment, and transfusion requirement.

RESULTS: Total 97 patients were included with 47 in the G group and 50 in the CyG group (Table 1). Average age was 64 and 63 respectively. Patients in the CyG group underwent ASCT earlier than G group due to change in mobilization practice over this time. 32% of patients in G group and 36% of CyG group required plerixafor rescue. No difference in number of apheresis days were noted. The cell dose target for MM varied in the CyG group due to changing practices over time which is a confounding factor. Total cell collection and apheresis day 1 collection were significantly higher in the CyG group (P<0.001). There were no cases of FN in G group and 3 cases of FN in the CyG group (P=0.0243). All 3 FN patients required hospitalization with 1 requiring ICU. Median time to engraftment after ASCT was less by 1 day in the CyG group, although there was no difference in length of hospital stay.

CONCLUSIONS: Stem cell mobilization with CyG resulted in significantly higher total collection cell count, and more efficient collection with higher yield on first day of apheresis. It did not lead to less plerixafor usage and was associated with possibly higher rate of febrile neutropenia, although larger sample is required to determine statistical significance. The “wise” mobilization regime may vary depending upon institutional resources for apheresis, cellular processing along with the risk of febrile neutropenia.

Table 1: Result Summary

<table>
<thead>
<tr>
<th></th>
<th>GCSF+/−plerixafor (N=47)</th>
<th>Cyclophosphamide/GCSF+/−plerixafor (N=50)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>64 (38-75)</td>
<td>63 (44-74)</td>
<td>0.631</td>
</tr>
<tr>
<td>Gender</td>
<td>M=28 (60%) F=19 (40%)</td>
<td>M=26 (52%) F=24 (48%)</td>
<td>0.453</td>
</tr>
<tr>
<td>Number of pts who received plerixafor</td>
<td>15 (32%)</td>
<td>18 (36%)</td>
<td>0.671</td>
</tr>
<tr>
<td>Number of days of plerixafor</td>
<td>0 (0-4)</td>
<td>0 (0-3)</td>
<td>0.557</td>
</tr>
<tr>
<td>Number of apheresis days</td>
<td>2 (1-4)</td>
<td>2 (1-5)</td>
<td>0.266</td>
</tr>
<tr>
<td>Total cells collected (x10⁶)</td>
<td>6.06 (4.32-12.34)</td>
<td>10.2 (4.73-19.83)</td>
<td>0.001</td>
</tr>
<tr>
<td>Total cells collected on day 1 of apheresis (x10⁶)</td>
<td>3.80 (1.24-8.53)</td>
<td>5.91 (0.67-19.83)</td>
<td>0.011</td>
</tr>
<tr>
<td>Pts with febrile neutropenia</td>
<td>0</td>
<td>3</td>
<td>0.243</td>
</tr>
<tr>
<td>Date of ASCT</td>
<td>March 2017 to January 2019</td>
<td>October 2015 to March 2018</td>
<td></td>
</tr>
<tr>
<td>Length of stay for transplant* (in days)</td>
<td>18 (15-52)</td>
<td>18 (16-49)</td>
<td>0.778</td>
</tr>
<tr>
<td>Number of pRBC transfused*</td>
<td>1 (0-5)</td>
<td>2 (0-18)</td>
<td>0.183</td>
</tr>
<tr>
<td>Number of platelet transfused*</td>
<td>3 (1-8)</td>
<td>2 (0-36)</td>
<td>0.027</td>
</tr>
<tr>
<td>Time to ANC &gt;0.5 (in days)</td>
<td>13 (11-16)</td>
<td>12 (11-16)</td>
<td>0.004</td>
</tr>
<tr>
<td>Time to platelet&gt;20 (in days)</td>
<td>19 (12-36)</td>
<td>18 (11-46)</td>
<td>0.022</td>
</tr>
<tr>
<td>Death &lt;100 days</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

*one patient not yet discharged
P35. EXAMINATION OF MISSING SCREENING FOR DISTRESS DATA IN A SAMPLE OF AUTOLOGOUS AND ALLOGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION RECIPIENTS

Jennifer Pink1, Sara Beattie1, Ph.D., A. L. Alawami2, Katherine-Ann L. Piedalue1, Linda E. Carlson1, Ph.D., Barry D. Bulzt1, Ph.D., Andrew Daly3, M.D., Naree Ager3, R.N., M.A., et Laura E. Labelle1, Ph.D.
1Tom Baker Cancer Centre, Calgary, AB; 2Department of Oncology, Faculty of Medicine, University of Calgary; 3University of Calgary

INTRODUCTION: Screening for distress (SFD) can facilitate routine monitoring of hematopoietic stem cell transplantation (HSCT) recipients’ quality of life and referrals to psychosocial and other specialized services when appropriate. Although a national standard in cancer care, there are no guidelines regarding frequency of administration of SFD tools. According to clinic protocol, patients in the Alberta Blood and Marrow Transplant Program (ABMTP) at the Tom Baker Cancer Centre (TBCC) should complete a SFD tool at each visit. SFD administration at every clinic visit may create undue burden on patients and/or providers, such that forms are actually less likely to be completed per visit and opportunities for intervention may be missed.

Main Thesis: We conducted a retrospective, longitudinal chart review study to test the hypothesis that the more often HSCT recipients visited the clinic during specific time intervals post-transplant, the less likely SFD data was collected per visit. We also examined associations between patient demographic and medical variables and percentage of missing SFD form data to determine if these factors inform SFD clinical utility in this context.

Method: SFD forms (Edmonton Symptom Assessment Scale and Canadian Problems Checklist) were collected from the outpatient electronic medical records of 327 patients who received an autologous HSCT transplant and 237 patients who received an allogenic HSCT transplant through the ABMTP at the TBCC between October 1, 2013, and November 15, 2016. Patient medical and demographic variables were imported from the Canadian Blood and Marrow Transplant Group (CBMTG)’s database.

Data Analysis Plan: Number of clinic visits during specific time intervals post-transplant (0-1 month, 1-2 months, 2-3 months, 3-4 months, 4-5 months, 5-6 months, 6 months-1 year, 1-2 years, and 0-2 years) will be correlated with the number of missing SFD forms per time interval. Percentage of missing forms per patient during each time interval will be computed. Correlation, independent t-test, and Kruskal-Wallis test analyses will be used to examine if demographic (e.g., age) and medical (e.g., diagnosis) variables are associated with missing data. Results for autologous and allogenic HCST recipients will be compared.

CONCLUSION: This research will inform how frequency of administration and demographic and medical variables may impact the clinical utility of a SFD tool across HSCT patients’ post-transplant trajectories.

P36. TRENDS IN AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANT IN OLDER PATIENTS WITH MULTIPLE MYELOMA 2000-2017: THE CANADIAN EXPERIENCE

Troy Climans MD, Hamilton Health Sciences Centre, McMaster University, Gregory Pond PhD, Juravinski Cancer Center, Department of Oncology, McMaster University, Hamilton, Ontario
Ronan Foley MD, Department of Pathology and Molecular Medicine, McMaster University, Hamilton, Ontario
Hira Mian MD, Juravinski Cancer Center, Department of Oncology, McMaster University, Hamilton, Ontario
Kristjan Paulson MD, Department of Medical Oncology and Hematology, CancerCare Manitoba, Winnipeg, Manitoba
Linda E. Carlson1,2, M.D., Naree Ager3, R.N., M.A., et Laura E. Labelle1, Ph.D.
1Tom Baker Cancer Centre, Calgary, AB; 2Department of Oncology, Faculty of Medicine, University of Calgary; 3University of Calgary

RATIONALE: AH SCT is a standard of care for newly-diagnosed multiple myeloma patients aged <65. AH SCT is performed less often in multiple myeloma patients aged >65 and especially over age 70. Nonetheless, a substantial number of patients aged >65 undergo AH SCT for multiple myeloma in Canada each year.

OBJECTIVE: The aim of our study was to characterize the utilization and outcomes for patients with multiple myeloma aged >65 years undergoing autologous hematopoietic stem cell transplantation (AH SCT) in Canada.

METHOD: AH SCT is a standard of care for newly-diagnosed multiple myeloma patients aged <65. AH SCT is performed less often in multiple myeloma patients aged >65 and especially over age 70. Nonetheless, a substantial number of patients aged >65 undergo AH SCT for multiple myeloma in Canada each year.

METHODOLOGY: We analyzed data from the Canadian Blood and Marrow Transplant Group (CBMTG) Registry of all 606 patients aged >65 who underwent AH SCT for multiple myeloma between 2000-2017. Summary statistics were used to describe the patient characteristics, comorbidities, cytogenetic abnormalities and outcomes. The Kaplan-Meier method was used for estimating time to event outcomes. Statistical significance was defined at the Î²=0.05 level of significance and all tests were two-sided.
RESULTS: The number of patients aged >65 years undergoing AH SCT for multiple myeloma was 197 from 2000 to 2005, 188 from 2006 to 2011 and 221 from 2012 to 2017. The median age of the patients was 67.7 +/- 2 years and approximately 12% of the patients were over age 70. ECOG PS was between 0-1 for over 80% of the patients. Most patients were being transplanted in the upfront setting with the median time from diagnosis to transplant being 7.8 months. The median Hematopoietic Cell Transplantation-Comorbidity Index score was 2. With regards to disease characteristics, most patients were ISS stage III (61.1%) and had at least a partial (45.0 %) or very good partial response (20.5%) prior to transplant. Melphalan 200 mg/m² was used in over 90% of the patients. Median overall survival was 71.0 months (95% CI 62.8 -78.6 months). Overall survival at 6 months was 97.4% (95% CI 95.7- 98.4%). Relapse-free survival was 47.0 months (95% CI 39.0 - 53.0 months). Overall survival (p=0.14) and relapse-free survival (p=0.20) did not significantly change over time.

CONCLUSIONS: AH SCT is a safe and effective treatment option for patients aged >65 with multiple myeloma. The baseline characteristics and outcomes in this patient population have not significantly changed over time since the year 2000. Further studies will need to be conducted in order to understand how to risk stratify and optimize outcomes for older patients, especially for those over age 70.

---

### Table 1. Baseline patient characteristics, baseline cytogenetic abnormalities and outcomes of patients aged >65 undergoing autologous hematopoietic stem cell transplant in Canada between 2000-2017

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>606</td>
<td>197</td>
<td>188</td>
<td>221</td>
<td></td>
</tr>
<tr>
<td>Sex Male N (%)</td>
<td>605</td>
<td>375 (62.0)</td>
<td>126 (64.3)</td>
<td>109 (58.0)</td>
<td>140 (63.4)</td>
</tr>
<tr>
<td>Age Mean (SD) N (%) &gt;70</td>
<td>606</td>
<td>67.7 (2.0)</td>
<td>67.9 (2.2)</td>
<td>67.5 (2.0)</td>
<td>67.6 (1.8)</td>
</tr>
<tr>
<td>Diagnosis to Transplant Median (range)</td>
<td>7.8 (7.0, 13.7)</td>
<td>8.4 (7.0, 11.6)</td>
<td>7.9 (7.3, 11.4)</td>
<td>7.1 (7.3, 13.7)</td>
<td>0.003</td>
</tr>
<tr>
<td>ECOG PS</td>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Planned Maintenance Tx N (%) Yes</td>
<td>460</td>
<td>31 (6.7)</td>
<td>2.79 (2.5)</td>
<td>4.16 (2.5)</td>
<td>21 (11.3)</td>
</tr>
<tr>
<td>ISS Stage at Diagnosis N (%)</td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Response Status Prior to Transplant V&lt;sub&gt;GPR&lt;/sub&gt; (3)</td>
<td>606</td>
<td>124 (20.5)</td>
<td>75 (38.1)</td>
<td>40 (21.3)</td>
<td>84 (38.0)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>20 (3.3)</td>
<td>1 (2.1)</td>
<td>7 (2.1)</td>
<td>9 (4.0)</td>
</tr>
<tr>
<td>Melphalan Dose mg/m²</td>
<td></td>
<td>14 (4.2)</td>
<td>30 (93.7)</td>
<td>7 (2.1)</td>
<td>12 (55)</td>
</tr>
<tr>
<td>HCT CI Score Median (range) N (%)</td>
<td></td>
<td>103</td>
<td>-</td>
<td>1.5 (0.4)</td>
<td>2 (0.10)</td>
</tr>
<tr>
<td>Translocation t(4;14) N (%) Yes</td>
<td>38</td>
<td>11 (29.0)</td>
<td>-</td>
<td>-</td>
<td>11/38 (29.0)</td>
</tr>
<tr>
<td>Translocation t(14;16) N (%) Yes</td>
<td>38</td>
<td>3 (7.9)</td>
<td>-</td>
<td>-</td>
<td>3/38 (7.9)</td>
</tr>
<tr>
<td>Deletion del17p N (%) Yes</td>
<td>38</td>
<td>3 (13.2)</td>
<td>-</td>
<td>-</td>
<td>5/38 (13.2)</td>
</tr>
<tr>
<td>Overall Survival N (%) Deaths</td>
<td>606</td>
<td>136 (22.4)</td>
<td>71.0 (62.8)</td>
<td>70.2 (56.7)</td>
<td>69.6 (52.7)</td>
</tr>
<tr>
<td>Median (95% CI) 6-mo (95% CI) OS</td>
<td></td>
<td>71.0 (62.8, 76.6)</td>
<td>70.2 (56.7, 92.7)</td>
<td>96.3 (92.3, 98.2)</td>
<td>78.0 (60.4, 78.6)</td>
</tr>
<tr>
<td>Relapse-Free Survival N (%)</td>
<td>606</td>
<td>235 (38.8)</td>
<td>102 (51.8)</td>
<td>88 (46.8)</td>
<td>45 (20.4)</td>
</tr>
<tr>
<td>Relapsed or Died Median (95% CI) RFS</td>
<td>606</td>
<td>47 (39.0, 53.0)</td>
<td>45.4 (34.9, 53.6)</td>
<td>59.0 (43.2, 63.3)</td>
<td>36.3 (28.3, 47.0)</td>
</tr>
</tbody>
</table>

---

@KPS=100 equivalent to ECOG=0; KPS=80-90 equivalent to ECOG=1; KPS=60-70 equivalent to ECOG=2; & comparison of ECOG 2 vs 0/1
* comparison of CR/nCR/VGPR/PR vs SD/NR/PD; relapse never treated
% comparison of score as a continuous variable between 2nd and 3rd time periods only
NC=root calculated; CI=confidence interval; OS=overall survival; RFS=relapse-free survival survival
P37. INCIDENCE, RISK FACTORS, MANAGEMENT AND LONG TERM OUTCOME OF ALVEOLAR HAEMORRHAGE IN PEDIATRIC HEMATOPOIETIC STEM CELL TRANSPLANT PATIENTS FROM 2000 TO 2015: A SINGLE CENTRE QUATERNARY INSTITUTION EXPERIENCE

Yogi Raj Chopra, Amal Alsabahi, Tal Schechter Finkelstein, Neil Sweezy, Corinne Ballt, Muhammad Ali, KY Chiang, Adam Gassas, Joerg Krueger Blood and Marrow Transplant/Cellular Therapy Program, Division of Hematology/Oncology, The Hospital for Sick Children/University of Toronto, Toronto, Canada

INTRODUCTION: Alveolar haemorrhage (AH) is a serious complication after hematopoietic stem cell transplant (HSCT). Pediatric data on incidence, risk factors, management and long-term outcomes is scarce with few case series or reports. Incidence in adults range from 1% to 21% and overall survival of around 25%. Older age, allogenic transplant, TBI conditioning, myeloablative conditioning, severe grade of acute GVHD have been found to increase the risk.

METHODS: We retrospectively collected data from the Hospital of Sick Children, Toronto, database and patient charts from Jan 2000 to Dec 2015. Variables assessed were diagnosis, type of transplant, graft source, conditioning regime, donor details, HLA match, acute GVHD, PICU admission, type of ventilation, presence of infections, timing of alveolar bleed, number of bleeds, bronchoalveolar lavage, lung biopsy, imaging, coagulation and platelet count at onset of bleed, use of corticosteroids, death, long term follow-up, pulmonary function test of survivors.

RESULTS: 1148 pediatric HSCTs were assessed, 31 patients (2.7%) developed AH. Of these 30/766 (3.9%) in patient receiving allogenic HSCT and 1/382 (0.2%) in autologous HSCT. One patient was excluded in the analysis as AH was due to disease relapse. In 21 patients alveolar haemorrhage was associated with an infection proven by bronchoalveolar lavage or lung biopsy (15 bacterial, 8 viral, 3 fungal; 8 had more than 1 organism). Six patients developed a significant second bleed at least 1 week apart from the first. Estimated overall survival (OS) with a median follow up of 5.1 years was 22.5% (7/31). No long-term pulmonary sequela seen.

CONCLUSIONS: Alveolar haemorrhage has a high mortality post pediatric HSCT. Those who bled late or developed a second bleed had an inferior outcome. High dose corticosteroids may be beneficial.

P38. EXCELLENT OUTCOMES WITH THE USE OF R-BUMELTT CONDITIONING REGIMEN FOR PRIMARY AND SECONDARY DIFFUSE LARGE B-CELL LYMPHOMA OF THE CENTRAL NERVOUS SYSTEM

Uday Deotare1,2, Adrienne Fulford1, Selay Lam1,2, Chai Phua1,2, Joy Mangel1,2, Brandon Dorland1, Karen Atkinson1 and Anargyros Xenocostas1,2

1London Health Sciences Centre, London, ON; 2Division of Hematology, Department of Medicine, Schulich School of Medicine and Dentistry, University of Western Ontario, London, ON

INTRODUCTION: Primary central nervous system lymphoma (PCNSL) and Secondary central nervous system lymphoma (SCNSL) has a poor long term progression free survival (PFS) in range of 42%. Autologous Stem Cell Transplant (ASCT) has been used in a randomized study to ascertain the efficacy of this procedure in this group. Hypothesis & RATIONALE: We hypothesized that the use of R-BuMeIlT regimen (Ho et al, Leuk& Lymph, 2016;57(1), 28-33), used for PCNSL will be as effective in the category of patients with PCNSL.

OBJECTIVE: To achieve higher remission and survival rates in the patients with PCNSL and SCNSL, when conditioned with CNS penetration of chemotherapeutic agents such as Thiopeta and Busulphan, by using the R-BuMeIlT regimen.

METHODOLOGY: A total of 5 patients, 2 with SCNSL and 3 with PCNSL were evaluated over a one year period from Dec 2017 till Dec 2018. The median age of this patient population was 62 years. The chemotherapy regimen used for SCNSL was CHOMP, and for PCNSL was MATRix. The median duration of chemotherapy cycles was 4, and all of them had achieved remission prior to transplant. All patients were planned to undergo ASCT using the Conditioning Regime of Rituximab 375 mg/m2 on Day-7, Thiopeta 250 mg/m2 on Day-6,5,
Busulphan 3.2 mg/kg on Day-4, -3, -2 and Melphalan 100 mg/m2 on Day-1. Usual supportive cares measures were in place including. No antibiotic prophylaxis was used. **RESULTS:** Patients received a median cell dose of 4x10^6 CD34+cells/kg (range: 2.5-5.7), had neutrophil engraftment at 11 days (range:9-13), platelet recovery was achieved on days 11,15 and 16 for three patients but was delayed at 46 and 89 days for 2 patients. Infective complications were common with documented bacterial blood stream infections in 4 out of 5 patients with significant platelet support due to thrombocytopenia. At a median follow up of 1 year (range: 7-15 months), all patients were in complete remission or metabolic response on radiological imaging. None of the patients died during or after transplant giving a 100% survival. This is compared to a 2 yr PFS of 69% in PCNSL (Ferreri et al, Lancet Hematol 2017; 4,510-23) and 76% for SCNSL (Ho et al), respectively. **CONCLUSIONS:** R-BuMelTt regimen can be used successfully as conditioning regimen for ASCT for patients with PCNSL and SCNSL, however with increased hematological toxicity, especially delayed platelet engraftment. Complete remission and survival is possible at short follow up of one year.

**P39. LONG-TERM CONDITIONS OF SURVIVORS AT 20 YEARS FOLLOWING ALLOGENEIC HAEMATOPOIETIC CELL TRANSPLANTATION**

Ayesh Seneviratne, Claire Wright, Wilson Lam, Jeffrey H. Lipton, Fotios V. Michelis

**INTRODUCTION:** Numerous long-term conditions and complications can arise as a result of Allogeneic haematopoietic cell transplantation (HCT) that may decrease survival and quality of life. The purpose of the present study is to review the comorbidities of a single-centre cohort of allogeneic HCT recipients that survived twenty years post-transplant.

**METHODS:** We retrospectively investigated 172 patients that underwent allogeneic HCT at the Princess Margaret Cancer Centre between 1979 and 1998 and who survived at least 20 years post-HCT. We documented performance status, comorbidities, number of medications and occurrence of secondary malignancies at 20 years, as well as survival following the 20-year time-point.

**RESULTS:** The median age of the cohort at 20 years post-HCT was 56 years (range 37-77), 157 (91%) of patients underwent transplant using a related donor. Eighty patients (46%) underwent HCT for CML, 44 (25%) for AML, 14 (8%) for ALL, 12 (7%) for aplastic anemia, 23 (13%) for other indications. At the 20-year mark, median Karnofsky Performance Status was 100 (range 30-100). Individual comorbidities were categorized into nine major groups of which endocrine (79, 46%) as well as respiratory and cardiovascular (82, 48%) system disorders were the most frequent. No comorbidities were seen in 24 (14%) patients. The most frequent individual comorbidities were dyslipidemia (n=54, 31%), and hypertension (n=54, 31%). One-year follow-up data after the 20-year mark was available for 135 (78%) patients. Median follow-up of survivors after the 20-year mark was 69 months (range 12-219 months). Five-year overall survival of the 135 patients was 94% (95%CI 86-97%) and at 10 years was 90% (95% CI 80-95%). When grouped by age at the 20-year mark, there was no significant difference in 5-year OS survival between ages 35-49 (n=46, 5-year OS 93%), 50-60 (n=54, 5-year OS 97%) and 61-75 (n=35, 5-year OS 87%). When grouped by the number of concurrent comorbidities, there was a significant difference in OS between the groups with 0-1 (n=52), 2-3 (n=50) and ≥4 comorbidities (n=33) (10-year OS 98%, 86% and 73% respectively, p=0.005, Figure 1).

**CONCLUSIONS:** Long-term allogeneic HCT recipients may develop a number of long-term comorbidities that negatively influence survival even past the 20-year mark. These findings warrant the continuous long-term medical follow-up of allogeneic transplant patients, regardless of age or time that has lapsed post-HCT.
P40. IMPACT OF TACROLIMUS LEVELS ON THE DAY OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANT ON GRAFT VERSUS HOST DISEASE

M. Boyce¹, M. Trinacty¹, J. Wentzell², J. Cheung¹, P. Gigueret¹, T. Nguyen¹,³
¹Department of Pharmacy, The Ottawa Hospital, Ottawa, ON, Canada; ²Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, ON, Canada; ³Ottawa Hospital Research Institute, Ottawa, ON, Canada

INTRODUCTION: Patients who receive a hematopoietic stem cell transplant (HSCT) are at risk of graft versus host disease (GVHD). Tacrolimus is an immunosuppressive agent used to prevent GVHD by suppressing the patient’s immune system. In order to maintain the safety and efficacy of tacrolimus, therapeutic drug monitoring of serum levels are warranted. It is currently unclear if a patient’s likelihood of developing GVHD is associated with a subtherapeutic tacrolimus level (<5 ug/L) on transplant day 0; the day of HSCT.

OBJECTIVE: To determine if subtherapeutic tacrolimus levels on the day of HSCT and the early period post-HSCT impacts the incidence of GVHD in patients receiving allogeneic HSCT. This study will also determine the proportion of time in therapeutic range (TTR) from the day of transplant to day +7 post-transplant for each patient, and the subsequent impact on the incidence of GVHD within 100 days of transplant.

RATIONALE: No current standard for tacrolimus monitoring exists across Canada for monitoring frequency, target levels, and when target levels should be achieved. At The Ottawa Hospital (TOH), tacrolimus levels are obtained daily for the first 7 days post-HSCT, followed by Monday, Wednesday, Friday levels thereafter. The target tacrolimus therapeutic range is 5-10 ug/L. It is deemed practically important to obtain therapeutic tacrolimus levels early within the HSCT processes to reduce the risk of GVHD although this has not been conclusively demonstrated within the literature. The results of this study will help to determine if achieving therapeutic tacrolimus levels on the day of HSCT is clinically important.

 METHODOLOGY: This retrospective chart review will include patients who received an allogeneic HSCT at the General Campus of TOH between November 1, 2015 and September 1, 2018. September 1, 2018 was chosen in order to capture GVHD post-transplant patients who had their transplant 100 days prior to data collection. Data from 218 study subjects were included with 3 patients who received 2 allogeneic HSCTs during the study period for a total of 221 transplants.

Results & CONCLUSION: Subtherapeutic tacrolimus levels (<5 µg/L) on the day of HSCT is not associated with a higher incidence of GVHD within 100 days. The proportion of TTR during the first week after HSCT does not affect GVHD outcomes within 100 days. This study suggests that it may not be clinically meaningful to target therapeutic tacrolimus levels on the day of HSCT.

P41. STEM CELL MOBILIZATION WITH FILGRASTIM IN PATIENTS PRIOR TO AUTOLOGOUS STEM CELL TRANSPLANT: A COMPARISON OF BIOSIMILAR FILGRASTIM TO THE ORIGINATOR

Melanie Trinacty¹,²,³, BSc, BScPharm, ACPR, Tiffany Nguyen¹,²,³ BScPharm, ACPR, BCOP, Jason Wentzell²,³, BScPharm, ACPR, BCOP
¹Department of Pharmacy, The Ottawa Hospital, Ottawa, ON, Canada
²Ottawa Hospital Research Institute, Ottawa, ON, Canada
³The Oncology Pharmacist Research Collaboration, Ottawa, ON, Canada

OBJECTIVE: To compare mobilization outcomes between a historical practice cohort receiving Neupogen® mobilization and current practice with Grastofil® mobilization in patients who will receive an autologous stem cell transplant (SCT).

RATIONALE: Grastofil® is a biosimilar filgrastim product that was approved by Health Canada in December 2016. Previously, stem cell mobilization for autologous transplants was performed using Neupogen®, but because of Ontario funding changes The Ottawa Hospital (TOH) Blood and Marrow Transplant program shifted to primarily Grastofil® use. This transition occurred in the summer of 2017. Grastofil® has not specifically been studied for the indication of stem cell mobilization, but clinician experience and familiarity have prompted its use in this capacity at TOH. Limited data are available on clinical outcomes regarding the switch from Neupogen® to Grastofil®.

METHODOLOGY: This is a retrospective chart review and quality assurance project post institutional practice transition from Neupogen® use (July 1, 2016 – June 30, 2017) to Grastofil® use (October 1, 2017 – September 30, 2018) in autologous SCT. There were 110 and 124 patients in the Grastofil® and Neupogen® cohorts, respectively.

RESULTS: Overall, there were no statistically significant differences in
the: number of patients requiring greater than one collection day (13% vs 20% p=0.14) and use of plerixafor (4.6% vs 5.6% p=0.7) between the Grastofil® and Neupogen® groups. There also were no statistically significant differences between the Grastofil® and Neupogen® groups in the average stem cell count at initial day of transplant (6.78 x 10^6 CD34+cell/kg vs 7.03 x 10^6 CD34+cells/kg, p=0.69) and in the total dose of filgrastim per patient (5912.48mg vs 5910.48mg, p=1). Based on Ontario Drug Benefit pricing, Grastofil® use was associated with an average direct drug cost savings of $548.36/patient.

CONCLUSION: The use of biosimilar filgrastim (Grastofil®) prior to autologous SCT did not result in significant differences in stem cell mobilization outcomes compared to the originator filgrastim but did yield drug cost savings.

P42. EVALUATION OF A CELL PRODUCT CULTURE COLLECTION PROCESS FROM A SINGLE INSTITUTION: OMISSION OF CULTURE COLLECTION AT TIME OF REINFUSION

AM MacDonald1 and SR Foley2

1Stem Cell Laboratory, Hamilton Health Sciences, Juravinski Hospital, Hamilton, Canada

BACKGROUND: The collection of cultures on thawed cryopreserved product has been in practice at our institution since 1994. Cryopreserved mobilized peripheral blood products are thawed at patient bedside. Three technologists attend the reinfusion: one to thaw the product, second person to collect sample culture and the third to draw up product into a syringe with the assistance from the second technologist. Cultures are collected on the thawed product using aseptic technique, which include an aerobic and anaerobic culture. Thawed product is drawn up into a syringe and infused through the patient’s line by push method by a Health Care Professional. Multiple cultures are collected on all products including: 1) precryopreservation, 2) cryopreservation solution and 3) post thaw product before infusion.

METHODS: Retroactive review of culture results from harvest collections from 244 patients that were cryopreserved and on thawed bags at reinfusion from May 2, 2017 to May 1, 2018. Review of data from 50 patients post infusion for any sign of fever that may have been attributed to reinfusion of cryopreserved product. Perform cost analysis for taking culture samples at reinfusion to include cost of Microbiology testing. Consult with other transplant centres to compare and assess culture-collecting process on HPC, Apheresis product. Review of Health Canada and FACT standards.

RESULTS: Culture analysis of 2-year data is as follows: Six of the 15 patients with positive cultures were detected in samples collected from thawed cryopreserved product at reinfusion. Bacteria identified were considered contaminants introduced at the time of sample collection. Due to a positive culture result, all six patients required antibiotics. Culture results were negative on samples collected on the harvest collection. Three of the 15 patients had a positive central line, which attributed to the positive culture in harvest and cultures taken on thawed cryopreserved product at reinfusion. Six of the 15 positive cultures results were detected in cultures collected from harvest collection and in cultures taken on thawed cryopreserved product at reinfusion.

Cost analysis of collecting samples for culture and performing microbiology tests: Cost of culture sampling for supplies is $7.44 per bag. Average number of bags infused per patient is five, which equals $37.21 per culture collection. Currently three technologists attend a reinfusion. If culture sampling is removed, only two technologists will need to be present in place of three. In 2018 there will have been over 750 bags thawed. Cost of culture collection equated to $16,382.50 for stem cell laboratory. The cost of culture testing for Microbiology is $9.25/test times 750 bags sent for culture=$6937.50. This does not include technologist time for processing and reporting results.

Culture Collection Consensus: A poll of 15 centers in Canada and the USA demonstrated that our facility is the only centre performing cultures at reinfusion and repeating cultures on positive results.

Standard review: After review of Health Canada and FACT standards, there are no standards stating that cultures on the product at reinfusion and repeat cultures on positive results is required.

CONCLUSION: The above findings suggest it is no longer necessary to collect cultures on thawed cryopreserved product at reinfusion. In our study positive post thaw culture results were considered contaminants or due to patients having a positive central line. Included in the change is to remove the direction to repeat cultures on HPC, Apheresis product with positive culture results before cryopreservation. If the practice of collection of samples on thawed product at the time of infusion did not occur, this would reduce the number of patients receiving antibiotics due to contaminants.
P43. ATYPICAL CNS MANIFESTATIONS POST ALLOGENEIC STEM CELL TRANSPLANT (ALLO SCT): ARE ALL THESE CENTRAL NERVOUS SYSTEM GRAFT VERSUS HOST DISEASE (CNS GVHD)? A REPORT OF 7 CASES FROM A TERTIARY CENTRE.

Sunu Lazar Cyriac, Zeyad Al-Shaibani, Shruti Prem, David Loach, Jeffrey Lipton, Rajat Kumar, Dennis Kim, Fotios Michaelis, Arjun Law, Wilson Lam, Jonas Mattsson, Auro Viswabandya

INTRODUCTION: CNS GVHD is a rare non-infectious post-SCT complication and difficult to differentiate from other similar conditions. Lack of characteristic radio-pathologic findings make CNS GVHD more challenging. We report 7 complex cases of post-Allo SCT CNS complications from a single institution.

METHODS: Post Allo-SCT patients (pts) who developed unusual CNS complications and where CNS-GVHD was highly suspected were selected. Infection, hemorrhage, collagen vascular disease and drug toxicities were excluded in them with reasonable certainty. We looked at their presenting parameters and also correlated with the 2010 consensus criteria for diagnosis of CNS-GVHD.

RESULTS: Seven pts were identified between 2014 to 2018. Baseline details are given in Table 1. Three pts did not have associated GVHD of other organs. Onset of symptom was acute (<100 days) in 3 and only 2 had chronic GVHD of other sites at the time of diagnosis. CSF protein was high in 6 pts (range 0.43-1.15g/L). MRI was abnormal in 6 pts but did not show any consistent pattern except for hyper-intensity in FLAIR image. Diagnostic biopsy was done in 2 pts and one had an autopsy. Main pathological findings were small vessel vasculopathy with perivascular (T but not B) lymphocytic infiltration, and rare hemorrhages or infarcts (Table 2). A detailed evaluation by the neurologist and Infectious disease specialists was done for all cases. Steroids were used in 6 pts at a dose range of 1mg/kg to >1gm pulses. Other immunosuppressive agents (ISA) used are given in Table 3. Currently 2 pts are alive with good disease control. Four

Table 1: General features of 7 patients

<table>
<thead>
<tr>
<th>Pt.</th>
<th>Age</th>
<th>Primary Disease</th>
<th>Conditi oning</th>
<th>GVH Prophylaxis</th>
<th>Onset of CNS Symptoms (Days after SCT)</th>
<th>Other GVHD Type</th>
<th>Sites of GVHD</th>
<th>CSF CELLS</th>
<th>CSF PROT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>67</td>
<td>MDS</td>
<td>FBT200</td>
<td>ATG-PTCy-CSA</td>
<td>745</td>
<td>None</td>
<td>None</td>
<td>Lymphocytosis</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>59</td>
<td>AMI</td>
<td>FBT200</td>
<td>ATG-PTCy-CSA</td>
<td>22</td>
<td>A/C</td>
<td>Liver</td>
<td>Normal</td>
<td>High</td>
</tr>
<tr>
<td>3</td>
<td>61</td>
<td>AMI</td>
<td>FBT200</td>
<td>ATG-PTCy-CSA</td>
<td>20</td>
<td>None</td>
<td>None</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>4</td>
<td>65</td>
<td>AMI</td>
<td>FBT200</td>
<td>ATG-CSA-MTX</td>
<td>80</td>
<td>None</td>
<td>None</td>
<td>Lymphocytosis</td>
<td>High</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
<td>MPAL</td>
<td>FBT400</td>
<td>CSMF</td>
<td>418</td>
<td>A/C &amp; C/C</td>
<td>Skin</td>
<td>Normal</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>68</td>
<td>CML</td>
<td>FBT1200</td>
<td>CP(30)ICS</td>
<td>166</td>
<td>A/C</td>
<td>Sk, Li, Mo, E</td>
<td>LGl increased</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>63</td>
<td>AML</td>
<td>FBT400</td>
<td>CP(30)ICS</td>
<td>132</td>
<td>A/C &amp; C/C</td>
<td>Sk, Li, Gl, Lu, Ki</td>
<td>Neutrophil high</td>
<td>High</td>
</tr>
</tbody>
</table>

Table 2: Pathology details available

<table>
<thead>
<tr>
<th>Pt</th>
<th>Surgical Biopsy</th>
<th>Autopsy</th>
<th>Most probable diagnosis</th>
<th>Unlikely diagnosis</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Done</td>
<td>Report</td>
<td>GVHD, PML</td>
<td>Viral encephalitis</td>
<td>Small vessel vasculopathy with perivascular inflammation, CD3+ T-Lymphocytes infiltrate</td>
</tr>
<tr>
<td>5</td>
<td>Done</td>
<td>Alive</td>
<td>Post treatment charges</td>
<td>Not conclusive of active GVHD</td>
<td>Minimal small vessel vasculopathy with perivascular inflammation, (? post-treatment change)</td>
</tr>
<tr>
<td>6</td>
<td>Not done</td>
<td>Done</td>
<td>GVHD</td>
<td></td>
<td>Small vessel vasculopathy with perivascular inflammation, CD3+ T-Lymphocytes infiltrate, small subpial hemorrhage</td>
</tr>
</tbody>
</table>
pts died presumably related to the CNS event. The survival among pts who died, range from 18 to 186 days (Table 3). We applied the 2010 consensus criteria for CNS-GVHD to this cohort (Fig 1). With this criteria, only 1 patient had a definite CNS-GVHD. Five did not have an associated chronic GVHD which was a mandatory criterion; in fact, 3 pts had an acute presentation.

**CONCLUSION:** CNS-GVHD could be a possible diagnosis in post SCT pts with atypical CNS complications. Early biopsy might be crucial in the management. The best ISA and duration of therapy is still unknown. Whether newer GVHD prophylactic regimens are better controlling systemic GVHD manifestations but poor at controlling CNS GVHD is a matter of debate. Also, a relook into the 2010 diagnostic criteria would help in better defining cases, especially the acute presentations and those without other sites of GVHD.

<table>
<thead>
<tr>
<th>Pt</th>
<th>Steroid</th>
<th>Others</th>
<th>Response</th>
<th>Alive/Died</th>
<th>Died due to CNS GVHD</th>
<th>Survival from CNS-GVHD (Days)</th>
<th>Survival from BMT (Days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>Aza</td>
<td>Partial response</td>
<td>Died</td>
<td>Yes</td>
<td>186</td>
<td>931</td>
</tr>
<tr>
<td>2</td>
<td>Yes</td>
<td>IVlg, MMF</td>
<td>Progression</td>
<td>Died</td>
<td>Yes</td>
<td>91</td>
<td>113</td>
</tr>
<tr>
<td>3</td>
<td>Yes</td>
<td>IVlg</td>
<td>Progression</td>
<td>Died</td>
<td>Yes</td>
<td>75</td>
<td>95</td>
</tr>
<tr>
<td>4</td>
<td>Yes</td>
<td>MMF</td>
<td>Partial response</td>
<td>Alive</td>
<td>Alive</td>
<td>178</td>
<td>258</td>
</tr>
<tr>
<td>5</td>
<td>Yes</td>
<td>MMF,Aza</td>
<td>Partial response</td>
<td>Alive</td>
<td>Alive</td>
<td>1649</td>
<td>2067</td>
</tr>
<tr>
<td>6</td>
<td>No</td>
<td>Nil</td>
<td>Progression</td>
<td>Died</td>
<td>Yes</td>
<td>18</td>
<td>184</td>
</tr>
<tr>
<td>7</td>
<td>Yes</td>
<td>Nil</td>
<td>Partial response</td>
<td>Died</td>
<td>No</td>
<td>58</td>
<td>190</td>
</tr>
</tbody>
</table>

P44. WHY WE SWAB: DEVELOPMENT OF A LIBRARY OF STORIES IN STEM CELL DONATION

Gabriele Jagelaviciute (Stem Cell Club; Western University, London ON), Kenneth Williams (Stem Cell Club; University of Toronto, Toronto ON), Edward W. Li (Stem Cell Club; McMaster University, Hamilton ON), Elena Kum (Stem Cell Club; Western University, London ON), Santhosh Thyagu (University of Toronto, Toronto ON), and Warren Fingrut (Stem Cell Club; University of British Columbia, Vancouver BC)

INTRODUCTION: Storytelling is an important tool to convey information. We conducted needs assessment surveys in February 2019 including 34 donor recruiters across Canada and 50 newly registered stem cell donors in Ontario; the results showed that a library of stories in stem cell donation is needed and could be used as a tool to support the education and recruitment of unrelated donors. Here, we describe the launch of Why We Swab, a library of stories in stem cell donation, to meet this need.

METHODS: Why We Swab is an initiative that aims to write and publish stories about Canadian recipients and donors of stem cells; patients searching for a match; family members; and transplant staff. The stories will be directed at an audience of potential stem cell donors. They will be told in a first-person narrative and published alongside the storyteller’s photo. A committee of donor recruiters was formed to find storytellers, conduct interviews, and write and publish stories. A process to create stories was developed: 1) secure the storyteller’s consent; 2) conduct the interview; 3) write a transcript; 4) committee meeting to review the transcript and story draft; 5) obtain final approval from the storyteller; and 6) publish the story online to social media, where it will be easily shareable.

RESULTS: At time of abstract submission, there are 5 complete stories: A Punjabi recruiter whose aunt received stem cells from an unrelated donor; a mixed-race recruiter who was later diagnosed with leukemia and may yet need a transplant ahead; a recipient of stem cells from her brother; a donor who overcame mental health issues to donate to an unrelated patient; and a mother in Saskatchewan whose child with Fanconi Anemia just matched to an unrelated donor. In addition, four recipients of stem cells from unrelated donors (three from Toronto and one from Quebec) have agreed to share their stories with the initiative. Stories will be published online to Why We Swab accounts across social media including Instagram, Facebook, and Twitter.

CONCLUSIONS: We describe the launch of Why We Swab, a library of stories in stem cell donation developed to support the education and recruitment of unrelated stem cell donors. The initiative will connect with additional storytellers and aim to publish new stories at least once per month. Future stories will capture unique themes and highlight the need for ethnically diverse donors by featuring storytellers from diverse populations.
ABOUT CTTC

The CTTC is a member-led, national, multi-disciplinary organization providing leadership and promoting excellence in patient care, research, and education in the field of blood and marrow transplant.

CTTC’s mission is to be the professional community and voice of hematopoietic stem cell transplant and cell therapy in Canada. Our vision is to work together towards world-leading hematopoietic stem cell transplant and cell therapy for all Canadians.

The CTTC values excellence, innovation, integrity, collaboration, and professionalism in care, education, and research in hematopoietic stem cell transplant and cell therapy. The CTTC believes that every patient has a right of equal access to the highest quality of life saving care that can be provided by hematopoietic stem cell transplant and cell therapy professionals in Canada.

Based on this, our strategic priorities are as follows:

- Education—Provide high quality educational programs that advance the practice of blood and marrow transplantation in Canada.
- Quality—Support centers on regulatory matters with standards, guidelines and resources.
- Research—Support research by CTTC members.
- Patients, Families and Caregivers—Support patient led initiatives and activities
- Advocacy—Advocate on behalf of members, programs and patients as needed
- Transparency in Governance—Ensure that all governance and operations are communicated in a transparent manner to the membership
- Financial Capacity—Support education, research, patient and outreach initiatives through fundraising and partnerships
Nous invitons tous les professionnels de la santé en greffe de cellules souches hématopoïétiques et en thérapie cellulaire à assister à notre congrès annuel dans la ville de Québec en 2020.

Le comité de planification du congrès 2020, présidé par le Dr Guy Cantin, élaborera un programme diversifié, incluant des séances plénières scientifiques, des présentations thématiques, des séances interdisciplinaires ou dédiées à une discipline. Nous sollicitons la soumission de résumés de travaux pour présentation orale ou sous forme d'affiche, ainsi que des symposiums satellites d'entreprises. Le CTTC est heureux de s'associer à Héma-Québec une journée thématique canadienne en partenariat avec l'Association mondiale des donneurs de moelle (WMDA). Nous vous invitons en grand nombre dans la pittoresque ville de Québec!

We invite all hematopoietic stem cell transplant and cellular therapy healthcare professionals to attend our annual meeting in Quebec City in 2020.

The 2020 conference planning committee, led by Dr. Guy Cantin, will create an exciting program that will include scientific plenary sessions, keynote presentations, multi-disciplinary and discipline-specific sessions, oral and poster abstract presentations, committee and society meetings, and corporate satellite symposia. CTTC is happy to partner with Héma-Québec for Canadian Day, part of World Marrow Donor Day, hosted by the World Marrow Donor Association (WMDA). We hope you will join us in charming Quebec City!