Global Practices and Challenges in the Diagnosis and Management of Disseminated Intravascular Coagulopathy

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Description Abstract

State the application's broad, long-term objectives and specific aims, making reference to the health relatedness of the project. Suggested length is 2-3 paragraphs.

Background, rationale and objective:

Diagnosing Disseminated Intravascular Coagulation (DIC) is a complex task due to the lack of a single definitive test or biomarker. The clinical presentation can vary based on the underlying cause and severity of the condition [1]. Multiple scoring systems have been developed to assist in diagnosing DIC, combining laboratory tests and clinical criteria. However, the applicability and availability of these tests and criteria can vary globally across settings and regions.

Various organizations, such as the International Society on Thrombosis and Haemostasis (ISTH), the Japanese Association for Acute Medicine (JAAM), the Korean Society on Thrombosis and Hemostasis, and the Japanese Society on Thrombosis and Hemostasis (JSTH), have proposed different scoring systems [2-6]. These systems have limitations, such as the need for laboratory tests that may not be available in some settings, or lack of validation in specific populations, like pregnant women. Some DIC scoring systems have low specificity, such as the Sepsis-Induced Coagulopathy score, which was positive in 84.2% of septic shock patients but had low specificity to predict mortality [7]. Low sensitivity is another issue: the ISTH overt-DIC score and the JAAM score were only positive in 32.1% and 34.4% of septic shock patients, respectively [8, 9]. There is no consensus on the best DIC scoring system for diagnosis and outcome prediction, and different studies have shown conflicting results on the performance and accuracy of various DIC scoring systems.

SSC Subcommittee Project/Collaborative Project

There is a need to evaluate current global practices around the diagnosis and treatment of DIC to identify gaps in knowledge, awareness, resources, and practices, and to improve patient outcomes. This evaluation will involve conducting a survey across various specialties and healthcare settings to examine the aspects described below.

The survey aims to evaluate global practices for diagnosing and treating DIC with the following specific objectives:

- To assess awareness of standard diagnostic criteria and scoring among various specialties, such as the pregnancy specific DIC scoring system.
- To identify variations in the diagnostic approaches and criteria healthcare professionals use for diagnosing DIC.
- To evaluate different treatment approaches employed globally for managing DIC.
- To assess the extent to which healthcare professionals adhere to existing guidelines or consensus statements in diagnosing and treating DIC.
- To identify challenges and barriers healthcare systems and professionals face in diagnosing and treating DIC globally.
- To determine best practices in diagnosing and treating DIC.

Design and methodology (Data expected to collect, sample size, and statistical analysis):

Describe concisely the research design and methods for achieving these goals. Suggested length 2-3 paragraphs

A prospective question-based survey of medical or health care professionals (HCP) involved in diagnosing and managing DIC. We will aim to reach out to clinicians in approximately 30-50 centers worldwide that represent different health care settings and global regions.

- Demographic data about the participating centers and HCP will be collected: country, specialty, health care setting,…etc. Data collection on the cause of DIC encountered and laboratory variables, prognostic scores, and treatments for DIC, following local routine practices. Analysis of the current diagnostic and therapeutic approaches for DIC and their effect on prognosis, using statistical methods, as well as barriers and challenges to diagnosis or treatment.
- Comparison of the different scoring systems (JAAM-DIC, ISTH overt-DIC, SIC) and their revised versions, in terms of sensitivity, specificity, and predictive values for DIC diagnosis and mortality prediction.

- Evaluation of the adherence to the ISTH guidelines and the formulation of new recommendations and guidance on the optimal management of DIC.
- A Chi-square or Fisher exact test will be used to test differences in proportions. Logistic regression will be used to analyze the relationship between dependent and independent variables and will be reported as an odds ratio (OR) with 95% CIs.

ISTH REDCap will be used to design the questionnaire. The questionnaire link will be shared in ISTH "My Community" to enhance participation. Participants can also be invited via personal communications, emails to various relevant societies, and international meetings.

Maha Othman will be responsible for the project coordination and data collection. The two co-leads Maha Othman and Theresa Nwagha (along with members of their teams) will be responsible for data analysis and reporting. A biostatistician from Queen's University Ms. Wilma M Hopman will be supporting the methodological approach and statistical data analysis.

Study population (Inclusion, exclusion, eligibility) (patient population; recruitment of participating institutions/physicians and subjects; minimum number needed; expected number):

Clinicians from different specialties involved in diagnosing and managing DIC from different healthcare settings and regions globally are eligible. Inclusion criteria; medical professional, involved in diagnosis or management of DIC. Exclusion criteria will be medical professional not involved in the management of DIC, other healthcare professionals will be excluded.

Careful consideration will be given to the diversity of the health care setting of the participating centers by utilizing New World Bank country classification by income level [10]. Subdivision analysis will be considered to avoid mis-grouping of data due to variations in low- or middle-income countries.

Expected timeline:

> Project set up: 1-2 month including SSC approval
> Time-line for gathering questionnaire data: 6-8 months
> Data analysis: 1-2 months
> Reporting: 2-3 months

Expected outcomes (ie. publications):

SSC communication, original publication, dissemination at Haematology, Haemostasis and Obstetrics and Gynaecology conferences.

Description of project set/up and management, needed infrastructure and resources (summary):

The project will be conducted under the ISTH SSCs: DIC subcommittee The project will be overseen by two co-leads: Maha Othman (previous Chair of Women's SSC and currently a co-chair on SSC-DIC), and Theresa Nwagha (co-chair on the SSC-DIC)

We would like to request assistance from ISTH with respect to facilitating the knowledge dissemination at future SSC meetings. We also plan to submit an application for small SSC grant to support the project costs.

References

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10. New World Bank country classifications by income level: 2022-2023 https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2022-2023.