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Third ASPED/ISPAD Diabetes Postgraduate Course Summary Report, 27th-29th April 2017 Dubai, United Arab Emirates

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Abstract

The third ASPED/ISPAD Diabetes postgraduate course is an intensive course initiated by the Arab Society of Paediatric Endocrinology and Diabetes (ASPED) in collaboration with the International Society of Pediatric and Adolescence Diabetes (ISPAD). The course is exclusively sponsored by Lilly, Gulf. The course was held in Dubai, UAE over 3 days. It was run by an expert group of faculty from 10 different countries. Candidates were selected following open competitive applications advertised by both ASPED and ISPAD. Strict enrolment criteria were agreed on by the ASPED/ISPAD course committee. 76 candidates (out of 132 applicants) from 13 countries were enrolled and attended the course. The course curriculum was delivered in the form of lectures, interactive sessions, case scenarios and research presentation in small group sessions. The themes of the curriculum featured; comprehensive diabetes care, diabetes registry and benchmarking, dietary challenges, monogenic and rare types of diabetes, acute and chronic diabetes complications, psychology and patient empowerment, obesity and type 2 diabetes in children, novel therapeutic approaches, diabetes prevention and use of technology in diabetes management. Various presentations were run on proposals of multicentric studies within ASPED countries. In addition, the use of surveys to collect data on current practice in key areas of Pediatric Diabetes was extensively discussed with the goal of identifying areas of strength and weaknesses and work towards implementation of diabetes care regional guidelines.

The course ended with tasks to follow and recommendations. A task force from different countries was nominated to initiate and follow up on the execution of the tasks. The main task was to start drafting guidelines for fasting Ramadan for older children and adolescents with diabetes. It was also planned to start a work up on neonatal diabetes incidence, types and management within ASPED countries. The course was accredited a total of 26 CME hours by the Saudi Commission of Health Specialties.

Summary Report

Diabetes is increasing globally, the rates of diabetes, both type 1 and type 2, are escalating rapidly around the world at alarming rates. Most of the children and adolescents with diabetes develop type 1 (autoimmune) diabetes but increasing numbers in the developed world present with type 2 (non-autoimmune) diabetes often associated with obesity. Training physicians to take care of this increasing population is one of the aims of the scientific societies.

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The Arab Society for Pediatric Endocrinology and Diabetes (ASPED) www.asped.org

ASPED was launched in Abu Dhabi, United Arab Emirates in September 2012 upon the initiative of a group of Pediatric Endocrinologists from the Middle East and North Africa. The society is a non-profit scientific organization and is registered under the Dubai Association Center (DAC) under License number DAC-0001. Its aim is to ensure a high standard of care and development in the

field of pediatric endocrinology and diabetes in the Arab region extending from the Gulf through the Northern African countries.

The International Society for Pediatric and Adolescent Diabetes (ISPAD) www.ispad.org

ISPAD is a professional organization that brings together doctors, nurses, dieticians, psychologists, scientists and other professionals who are driven to improve the well-being of children and families afflicted by diabetes throughout the world. ISPAD accomplishes this by improving understanding of the etiology and epidemiology of diabetes, and providing education to physicians and other health care professionals as to the proper care of children, adolescents and young adults with diabetes, as well as developing guidelines for appropriate diabetes care. ISPAD is the only worldwide organization concentrating on all aspects of diabetes in children, adolescents and young adults focusing upon the underlying science and quality of care that these young people receive. It has published -and updates every 4-5 years - the ISPAD Clinical Practice Consensus Guidelines (Pediatric Diabetes 2014, 15, S20) freely accessible. Currently an e-learning program is developed based on these guidelines.

The third ASPED/ISPAD diabetes postgraduate course

The course was held at the Hyatt Regency, Health Care City, Dubai between the 27th and the 29th of April 2017 It is a continuation from the 2 previous annual courses and is aiming to empower and update physicians involved in the care of young people with diabetes and practicing in the Arab countries. The course is intended to be a platform to share expertise, research and development in the field of diabetes. It was advertised for open competition in ASPED and ISPAD sites and strict enrolment criteria were enforced by the ASPED/ISPAD course committee. The curriculum covered the key issues related to diabetes management in young people and the latest updates and insights from physicians involved in managing children and young people with diabetes.

The meeting highlighted the interests and the needs of paediatric endocrinologists in the region. In addition, it was the ideal setting for networking and brainstorming about research ideas, collaboration with international societies and programs and available resources. With prominent international and regional speakers from ISPAD and ASPED, the course gathered over 90 participants from 16 countries and was run by experienced paediatric endocrinologists from ASPED and ISPAD. The course showed a diverse gathering of paediatricians and diabetologists who participated effectively in the course curriculum.

Course sessions

Various formats of presentations and specialised sessions were run during the course, covering the main topics in Diabetes including:

A. Diabetes comprehensive care

B. Diabetes registry and bench marking

C. Technology applications in Diabetes

D. Diabetes complications; acute and chronic

E. Psychology and patient empowerment in Diabetes

F. Medical nutrition therapy in diabetes

G. Newer therapy modalities and prevention in diabetes

H. Obesity and type 2 diabetes in children and adolescents

I. Monogenic diabetes

J. Insulin resistance in Polycystic Ovary Syndrome

Small group discussion/presentations

The small group discussion, aligned in 4 parallel sessions, featured various interesting issues in diabetes. The presentations were under case presentation or research projects discussion. In addition, there was a lot of discussion about diabetes service provision in less developed countries where resources are sparse.

The main topics for the small group discussion were:

A. Diabetes Unusual Presentations

B. Challenges of Diabetes Management

C. Type 1 Diabetes Complications

D. Diabetes & Psychology

E. Diabetes Education

F. Monogenic Diabetes; MODY & Neonatal Diabetes

G. Hyperinsulinemic Hypoglycemia

H. Obesity & Type 2 Diabetes

I. Diabetes & associated syndromes

Small group workshops

The 4 groups rotated in 3 stations for Psychology, Nutrition and Diabetes technology.

Course special features and awards: A ceremony award for best case presentations and best research project was held at the end of the course. 6 case presentations and 4 research projects were selected from each small group discussion to receive a recognition award by ASPED and ISPAD.

The 5 winning case presentations were (in no particular order):

A. Early onset diabetes in Prader Willi syndrome

a. Najwa Abdelhag, Makassed Islamic Hospital, Jerusalem, Palestine

B. Acidosis and hyperglycemia; not always diabetes

a. Naif Hamdan, Department of Pediatrics, Prince Mohammed Bin Abdulaziz Hospital, Al Madinah, KSA

C. Acute pancreatitis and DKA after L-asparaginase treatment for ALL

a. Shayma Elsayed, Pediatric Endocrinology and Diabetology,

Alexandria University, Egypt

D. Iatrogenic Hyperglycemia

a. Afnan Abusrewil, Pediatric Department, Al Khadra Hospital, Tripoli, Libya

E. 2 siblings with Rabson Mendenhall

F. Sania Awaidah, Pediatric Endocrinology Department, King Abdul-Aziz Medical City, Jeddah, Kingdom of Saudi Arabia

G. A case of MODY in siblings

a. Hanan Hassan, Mubarak Al Kabeer Hospital, Kuwait

The 4 winning research projects were (in no particular order)

1) Advance Carbohydrate counting in Management of Children with Type 1 Diabetes Mellitus HananAl Azkawi, National Diabetic and Endocrine Center, Royal Hospital, Oman

2) Osteopontin levels as a marker for diabetic vasculopathy in type 1 diabetes

a. Rasha Adel Thabet, Department of Pediatrics and Clinical Pathology, Faculty of Medicine, Ain Shams University, Cairo, Egypt

3) Epidemiological Features of Type 1 diabetic Jordanian patients up to 18 years of age

a. Rasha Odeh, University of Jordan School of Medicine, Amman, Jordan

4) Correlation of vitamin D status and glycemic control

a. Mohamed Fares, Endocrine Unit, Pediatric Hospital, Karbala, Iraq

Course Accreditation

The scientific contents of the course was awarded 18 hours of CME educational points. Additionally, 8 CME points were accredited to the workshops. The accreditation was granted by the Saudi Commission for Health Specialties.

Acknowledgement

We are very grateful to ISPAD for the fruitful collaboration and thankful to ISPAD and ASPED speakers and moderators who ran the course to a high educational level. We thank Lilly, Gulf for their generous support to Paediatric Diabetes education in our region. Special thanks are to Dr Abdelaziz Twaim and the Saudi Commission for Health Specialties for accrediting the course.

Monogenic Diabetes: Clues to Diagnosis of Diabetes other than Type1

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Abstract

Monogenic diabetes is a rare condition resulting from mutations in a single gene. In contrast, the most common types of diabetes, we encounter are type 1 and type 2, caused by multiple genes. The rising epidemic of childhood obesity cases and recent advances in molecular genetics has led to the identification of children with gene defects. With the increase in the survival rate of children with cancer and other chronic illnesses cases of secondary diabetes have become more prevalent. The importance of making the correct classification of childhood diabetes are numerous: It could guide the best treatment for diabetes, define the diagnosis in other family members and explain other associated features. However, if not certain it is safer to treat any child with diabetes as type 1.

The presentation will explore when type 1 diabetes is unlikely and provide clinical examples of different forms of non-type 1 diabetes with more focus on monogenic diabetes.

Genetics Related Obesity and Diabetes

Abdulsalam Abu Libdeh*

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Abstract

Obesity has become one of the most public health problems worldwide, as the prevalence is increasing and the comorbidities associated with this epidemic including diabetes as part of a disease or as a consequence. Genetic factors play an important role and interact with environmental factors to produce obesity. Children with genetic syndromes associated with obesity typically have early onset obesity and characteristic findings on physical examination.

The genetic cause has been isolated in special diseases or syndromes, or attributable to a mutation in a single gene involved in regulation of body weight.

We will discuss selected genetic syndromes associated with obesity and patients with these syndromes that develop diabetes mellitus.

Motivational and Behavioral Changes for Teens with Diabetes

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If you want to ACE your clinical interaction with a teen you should keep in mind that Autonomy, Collaboration and Evocation (ACE) are your bases. Recognizing that you can't MAKE a person "do what is good for them", especially a teen, is the first step. Instead allowing them to come to the healthy changes themselves is key. With motivational interviewing, the teen will come up with their own ways to stay healthy and engage with their diabetes regimen.

The provider helps them recognize what can happen to allow these changes. He/she then helps them adjust as they test the changes. Motivational interviewing is about creating a framework for change then being a support through the process.

Once the points of change have been identified and goals set, behavioral changes come into play. The provider brain storms with the teen to identify unhealthy behaviors to be substituted with healthier ones. Starting with the most detrimental behaviors and working ones' way through a list of needed changes.

The goal in each interaction is not perfection. It is to create small sustainable changes that allow the teen to feel empowered and WANT to keep making healthy choices. The combination and motivational interviewing and behavioral changes together can be powerful tools used in everyday clinics.

Introduction to Insulin Pump Therapy

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Hamad Medical Corporation, Qatar

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Abstract

The DCCT trial since 1993 stated that, the better the control of diabetes the less likely the occurrence of complications. The continuous subcutaneous insulin infusion (CSII) via insulin pump is considered a great achievement in the insulin delivery that proved its superiority in controlling diabetes over other regimens. The insulin pump is indicated in cases with poor control, needs accurate frequent doses, young age, lifestyle flexibility, and many other indications make it appropriate for most of cases. It has advanced features in the basal and bolus insulin delivery, small doses as low as 0.025 IU, needless frequent doses, and half closing the loop by using the continuous glucose monitoring system (CGMS) with the pump. For the best achievement with pump, patient should be familial with technology use, counts carbohydrates, and have realistic expectations from the pump therapy as an insulin delivery modality rather than a diabetes cure. Closing the loop between the insulin pump and the CGMS is the current future of the technology and diabetes management.

Diabetes Mellitus; between Autoimmunity and Monogenicity

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Abstract

There has been a revolution in the field of diabetes particularly in the molecular genetic aspect. Various genes are now identified as the cause of monogenic diabetes. These gene defects can result either in isolated diabetes or multi-systemic disease phenotype. In addition, it can result in either a transient or permanent diabetes. Neonatal diabetes is a rare but an interesting entity of diabetes. It is commonly inherited as autosomal recessive and is more common in the Gulf region due to the high incidence of consanguinity.

Autoimmunity is known to cause type 1 diabetes which is the most common type of diabetes in children and adolescents. Autoimmunity in polyendocrinopathy syndrome is known to be associated with AIRE gene defect and has a phenotype of multiple autoimmune diseases including diabetes. More recently, mutations in genes involved in the normal immune system regulation have been confirmed to trigger various autoimmune diseases including diabetes. Mutation in Stat3 and IL2RA and FOXO3 are recently described in association with autoimmune diabetes and other systemic manifestation.

We will review the forms of diabetes encountered in our region due to monogenic causes and genetically-triggered autoimmunity.

Insulin Resistance and PCOS in an Adolescent

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Abstract

Polycystic Ovary Syndrome (PCOS), a heterogeneous disorder characterized by androgen excess, irregular menses and/or cystic ovarian morphology, has peri-pubertal onset. Genetic and environmental factors that influence steroidogenesis, steroid metabolism, neuroendocrine function, insulin sensitivity and adaptation to energy excess are believed to play a role in its pathophysiology. The diagnosis of PCOS in adolescents remains challenging due to the overlap between some of the features of PCOS and the normal changes that occur frequently in the pubertal years. In addition to androgen excess and reproductive disturbances, some adolescents with PCOS are at higher risk of metabolic derangements with long-term health sequelae.

Obesity, impaired glucose tolerance, diabetes and the metabolic syndrome are highly prevalent among the youth. Insulin resistance and the consequent hyperinsulinemia are believed to play a pivotal role in the development of the PCOS associated metabolic disturbances and in promoting an ongoing state of androgen excess. Given that PCOS is not only a reproductive but also a metabolic disorder starting early in adolescence necessitates that therapeutic options target the hormonal as well as the metabolic disturbances.

The conventional treatment of PCOS has been oral contraceptives (OCPs) and anti-androgenic agents. Alternative treatment modalities that target insulin resistance including insulin sensitizers such as metformin, the thiazolidinedione's (TZDs), the glucagon-like peptide agonists, and metabolic surgery have been studied with variable results. In this session, we will briefly discuss some of the diagnostic dilemmas in PCOS diagnosis in adolescents, review the available data regarding the role of insulin resistance in PCOS pathophysiology and summarize some of the data regarding different treatment modalities in the adolescent age group.

Molecular Mechanisms of Rare Types of Diabetes Mellitus

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Abstract

Diabetes mellitus is a heterogeneous disorder characterized by chronic hyperglycemia and induced by a large number of different causes. In addition to the typical Type 1 and Type 2 diabetes mellitus (which account for about 90% of all cases) there are also some rare types of diabetes mellitus. Over the last 10 years there has been an explosion in knowledge in understanding the molecular mechanisms of these rare types of diabetes that are typically due to monogenetic causes. The molecular basis of rare types of diabetes range from defects in the development of the pancreas (pancreatic agenesis/hypoplasia), defects in key channels involved regulating insulin secretion, defective enzyme function, endoplasmic reticulum stress, autoimmune dysregulation, defects in ciliary function, defects in adipose tissue and transcription factor defects. In this talk, I will give an overview of the rare types of diabetes mellitus and review some of the underlying molecular mechanisms.

Childhood Diabetes in Sudan: Epidemiology and Services

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Abstract

Sudan is a country with limited resources yet it has got a relatively high incidence of type 1 diabetes mellitus compared to many other Arab countries excluding the Gulf. Nevertheless, the Sudanese Childhood Diabetes Association, in collaboration with the government and many local and international societies has managed to establish a very good network of childhood diabetes clinics throughout the country to make the services accessible and affordable they have also managed to conduct epidemiological studies and establish registries in many states. One of the main projects is to build a childhood diabetes center for provision of high quality service, education and training as well as to do research work.

Type 1 Diabetes in Egypt; Establishing Diabetes Centers

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Abstract

Type 1 diabetes management requires multidisciplinary team involvement and significant resources. In many areas around the world, these requirements impose marked challenges. In Egypt, there was a key role for the Egyptian Society of diabetes and endocrinology for children (ESPED) in establishing diabetes care for the population. ESPED collaborated with ISPAD in various aspects to ensure quality services and education. Training health care professionals in various educational courses run by ISPAD had a major impact on the level of education which reflected positively on patient care and diabetes knowledge.

Management of Type 1 Diabetes in Saudi Arabia

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Abstract

Diabetes is a growing global problem and there is no escaping the diabetes epidemic. It is a complex, chronic disease requiring continuous medical care with multi factorial risk-reduction strategies beyond glycemic control. Saudi Arabia in top 10 prevalence of diabetes. The diabetes care in King Abdul-Aziz Medical city is an example of diabetes care in Saudi Arabia. It depends on the integration of evidence-based clinical practice guidelines and individualized diabetes care for each patient. Diabetic patients are provided care through a team-based approach and involvement of dedicated health care professionals including nurses, diabetic educators, dietitians, pharmacists, where high-quality patient care is always a priority. The strategies of diabetes care depend on the stage of glucose impairment (diabetes or prediabetic). For individuals with prediabetic education about the causes, consequences and prevent diabetes are the main goals while the main drivers for the diabetic patients are to reduce A1C and avoid long-term complications.

Micro vascular Complications: Rare or under diagnosed In Children. Case Based Presentation

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Abstract

Type 1 diabetes mellitus (T1DM) is the most common chronic disease in childhood. Good metabolic control during childhood and adolescence is crucial for the future health and life quality of these patients. As the incidence of T1DM continues to rise, particularly in children, the burden of microvascular complications will also increase and negatively influence the prognosis of young people with the disease. Therefore, early detection of risk factors and signs of complications is of paramount importance in order to facilitate the early implementation of intervention strategies, which could reduce their development and/or progression. There are studies in which hypertension, microalbuminuria, retinopathy, and neuropathy are reported with variable frequencies related to metabolic control level and diabetes duration in adolescents with T1DM.

It is noteworthy that especially in adolescents, micro vascular complication frequency is more than the expected in 2-5 years' time following initiation of T1DM. The high prevalence of early markers of complications risk during adolescence should also prompt further debate as to the need for additional therapeutic interventions to provide protection from micro vascular complications in this age group, where HbA1c levels inevitably deteriorate. Periodical screening for complications in diabetic patients, by providing information both to the diabetes team and the family, serves to improve metabolic control, and consequently early precautions can be taken.

Macro Vascular Complications in Diabetes

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Abstract

Hyperglycemia in diabetes is harmful to many tissues in the body, and this highlights the importance of diabetes management to focus on controlling the blood glucose levels tightly to minimize

the tissue damage. In particular, the effects of hyperglycemia on the vascular tree are a major source of morbidity and mortality in both type 1 and type 2 diabetes.

We can separate the vascular effects into Micro vascular complications (diabetic nephropathy, neuropathy, and retinopathy) and Macro vascular complications (coronary artery disease, peripheral arterial disease, and stroke). Whereas young people with type 1 diabetes are mainly at risk of micro vascular complications, those with type 2 diabetes are more at risk of macro vascular complications and these present at a far younger age and have a higher mortality than in the non-diabetic population. We also recognize that the prediabetic state is associated with development of complications even before diabetes manifests. As we are now diagnosing children with type 2 diabetes, they are developing macro vascular complications in young adult life, which has huge implications for their health during their most productive years.

Childhood Diabetic Services in Libya

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Abstract

Childhood diabetes is on the rise worldwide and Libya is not exception, the pediatric diabetes services started in 1989 in Tripoli where 65 patients were diagnosed. By 2016 over 320 diabetic children and adolescents were diagnosed (5 folds increase).

Currently, the department is caring for over 4000 patients and the diabetic team is comprised of, consultants, senior registrars, registrars, SHO's, diabetic nurses, dietitians and clinical pharmacists.

Our department plays a key role in providing care and training for our health care professionals in the field of childhood diabetes. We provide 24 hours coverage all year around. This program is recognized by Libyan board of pediatrics and the Libyan board of general practice for training pediatric fellows and General Practice (GP) fellows, who spend anywhere from 6 weeks to 6 months respectively, obligatory training in childhood diabetes strengthening the care for future generations. Over 50 dissertations have been completed so far in our department under our supervision. In our clinics we noticed that, of the newly diagnosed diabetic patients, 20% were under the age of 5 years, type II and monogenic diabetes was recently found to be more prevalent. 25% of these children and adolescent presented in DKA and more so in the under 5 years old. 45% of our diagnosed patients have a family history either of type I or type II or both.

With the development of the Libyan pediatric diabetic society in 2003, it was quite beneficial as they are well represented in IDF, also securing monthly financial assistance from the ministry of social well fare for all diabetic children in Libya. The society has successfully organized many workshops and diabetic camps in different regions of Libya and abroad.

Despite the special transitional phase, Libya is passing through, pediatric diabetic services accepted the challenge and continues to provide care and services for all diabetic children & adolescent in its fill capacity.

Updates on the Artificial Pancreas

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Abstract

In children with type 1 diabetes, optimal glycemic control enhances growth and ensures normal pubertal development [1]. Insulin pump therapy (continuous subcutaneous insulin infusion [CSII]) represents an important advancement in diabetes technology that can facilitate optimal glycemic control in children [2] with type 1 diabetes, even in the younger ones [3]. In addition, pediatric patients with type 1 diabetes using insulin pump present lower glycemic variability and a concomitantly lower glycemic risk parameter compared with those using multiple daily injections [4]. However, even if CSII is now a validated therapeutic option for children with type 1 diabetes, we are still far from achieving optimal metabolic outcome for everyone [2,5-7].

Fine-tuning CSII has become a crucial factor to consider, and the right time to administer bolus insulin [8], the proper type of bolus according to different meals [9], and the infusion site need to be taken into account.

In the last year several advances have been made about closing the loop with new data in pediatric patients, even in the younger age (5-8 years), about predictive low suspend technology and glucose monitoring [10].

The Acute Complications of Type 1 Diabetes

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Acute diabetic dysglycaemia can result in hypoglycaemia, severe hypoglycaemia, hyperglycaemia, increased glycaemic variation and diabetic ketoacidosis. Most of these will impact upon conscious state or cognition. Acute episodes of dysglycaemia may present symptomatically as clinically unrecognized events that are detected solely by blood glucose monitoring. This latter mode of

presentation emphasizes the importance of an awareness of the accuracy of ambulatory blood glucose measurement. This talk will focus upon the reliability of blood glucose measurement and the cognitive sequelae of various dysglycaemic states. In addition, new data from functional MRI/glucose clamp studies will be discussed.

Role of the Micro biome in the Etiology of Type 1 Diabetes

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Abstract

The incidence of type 1 diabetes is globally increasing. Genetic predisposition in combination with (an) environmental factor(s) seem to cause an autoimmune disruption-humoral as well as cellular-and progressive destruction of insulin secreting beta cells, ultimately leading to insulin deficiency and the need for lifelong treatment. Viral, bacterial as well as food factors have been identified as potential candidates. Recently the gut micro biome has been entering the field as a new potential player, contributing to health and disease. The potential role for the micro biome will be discussed, based on the recent developments in this field.

Diabetes Outcomes: Teams, Targeting and Registries

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Abstract

Main objective of diabetes care in children and adolescents is to optimize metabolic control in combination with a good quality of life, normal growth and psychosocial development.

To achieve this, multidisciplinary teams, delivering the diabetes education, play an essential role. Communication within the team, and a clear unanimous message - target setting- towards the family and the patient are influencing outcome. So far, these factors may be more relevant than technology when discussing outcome. A continuous longitudinal evaluation on the quality of care outcome in all age groups is essential. This should become part of routine care, to allow centers to show their clinical outcome. Through the ongoing discussion on quality of care within teams, and between teams, best practice may be identified, implemented and evaluated.

To reach the treatment goals is a continuous challenge, for teams, but even more so for the patients. Optimizing team work, defining clear targets and evaluating the outcome continuously, will be discussed, based on the many studies currently published in this field.

Medical Nutrition Therapy in Diabetes

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Abstract

Nutrition intervention for children and adolescents should focus on achieving blood glucose control without excessive hypoglycaemia. It should be tailored according to each patient's age, pharmacological treatment, lipid levels, and co-morbid medical conditions.

Goals of Medical Nutrition Therapy for people with Diabetes:

a. Attain individualized glycemic, blood pressure, and lipid goals

b. Achieve and maintain bodyweight goals

c. Delay or prevent complications of diabetes

d. To address individual nutrition needs based on medical, cultural and personal needs and preferences.

e. Empowering the person having diabetes and his family

Tribal distribution of Type 1 Diabetes Mellitus in Port Sudan

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Abstract

The Red Sea state in Sudan is inhabited mainly by the Beja group which has two main ethnical tribes Hadandwa and Beni-Amer, and mixture of other Sudanese tribes. The Hadandwa tribe compromises more than 50% of the population of Port Sudan the capital of Red Sea state. The number of children diagnosed with diabetes continues to rise in the childhood populations of Red Sea state and internationally and it becomes increasingly important to identify risk factors to plan interventions to reduce the burden of this condition.

Objective: The aims of this study are to maintain the Port Sudan Register of Diabetes in Children and continue to collect information on children newly diagnosed with type 1 diabetes for Investigating the environmental etiology of type1 diabetes in children. Investigating tribal distribution and other risk factors for children with type 1 diabetes mellitus (TIDM) in follow-up in the pediatric diabetic clinic in Red Sea state.

Study Design: In this observational cross-sectional study, the demographic data of 112 children Red Sea state, who were diagnosed with TIDM under follow up in the diabetic clinic were analyzed with special emphases on ethnicity and tribal distribution and other risk factors.

Results: From the 112 children, there is female predominance 60%. Regarding the tribal distribution of the study group 48 were from the Beni-Amer tribe, 18% Hadandwa and 34% represent the other Sudanese tribes. Although the Beni-Amer tribe represent minority regarding other tribes living in Red Sea state.

Conclusion: The high prevalence of TIDM in Beni-Amer tribe in Red Sea state Sudan needs further environmental and genetic studies.

Serum Adipokines and Vitamin D Levels in Patients With Type1 Diabetes Mellitus

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Abstract

Background: Adiponectin, leptin and resistin are adipokines that play a key role in the regulation of lipid and carbohydrate metabolism in type 2 diabetes. However, their influence in type 1 diabetes mellitus is still undisclosed.

The Aim: The aim sof this study was to measure serum adiponectin, leptin and resistin levels and to investigate their relationships with vitamin D and other clinical and laboratory parameters in patients with type 1diabetes.

Subjects and Methods: Fifty subjects with type 1 diabetes and fifty healthy patients age and sex matched subjects were selected from the Endocrinology Outpatient Clinic of Cairo University Pediatrics Hospital. Enzyme-linked immune sorbent assay was used to measure the levels of leptin, adiponectin and resistin. Vitamin D levels were measured using electro-chemiluminescence immunoassay.

Results: There were no significant differences in adiponectin and leptin levels between diabetic and control subjects. Resistin levels were significantly higher in the diabetic group compared to controls and in post-pubertal patients compared to prepubertal patients. Serum resistin in type1 diabetes showed negative correlation with vitamin D and positive correlation with HbA1c, while other adipokines were not interrelated.

Conclusion: These results strongly support a role of resistin and vitamin D deficiency in the pathophysiology of type 1 diabetes. Vitamin D may be involved in resistin regulation through unknown mechanism. Further studies are recommended to understand resistin regulation in type 1 diabetes.

Changes in Insulin Therapy Regimens and Hba1c in Children and Adolescents With Type 1 Diabetes, and Their Associations with Diabetes Knowledge and Quality of Life (QOL)

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Abstract

Research design and methods: The study included 4293 children and adolescents (12.9±2.6 yr, more than one year of diabetes) attending AJD (Aide aux Jeunes Diabétiques) summer camps between 2009 and 2014. The distribution of insulin regimens and the aassociations between HbA1c, therapeutic regimens, diabetes knowledge (AJD questionnaire) and Quality of Life (QOL, Ingersoll et Marrero, Hvidoere Study Group short version) were assessed.

Results: The percentage of youth treated with the insulin pump increased up to about 45%, basal bolus stabilized around 40%, and other regimens decreased majorly. HbA1c was higher with regimens using premixed insulins only (9.05±2.43 %), but there was no difference between pump (8.12+1.09 %), basal bolus (8.32+1.33 %) and 2-3 injections (8.18+1.28 %). Mean HbA1c

decreased by 0.014% per year. The percentage of HbA1c <7.5% increased by 1.5% per year, and the percentages of HbA1c > 9% or > 10% decreased by 4% and 5.5%, the changes being greater with the pump. HbA1c was weakly associated with diabetes knowledge, and strongly with general health perception and perception about diabetes.

Conclusion: The percentage of T1D children and adolescents with the highest risk of complications decreased markedly. The distribution of HbA1c better depicts the glycemic control in a population than the mean or the percentage of patients reaching the target (7.5%). HbA1c was more strongly associated with general health perception than with therapeutic regimens and diabetes knowledge.

Assessment of Puberty and Anthropometric Measurements for Patients with Type 1 Diabetes and their Correlation with Some Disease Complications

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Abstract

Background: Diabetes is now one of the most common non-communicable diseases globally. Diabetes as a chronic disease can disturb physiology, thus affecting linear growth and pubertal development. Therefore, successful treatment of diabetes is of an immense importance during puberty for the achievement of normal growth and puberty.

Objectives: To assess growth and pubertal status for the children with type 1 diabetes, as well as their correlation with the presence of certain complications related to the disease like hyperlipidemia and hypertension.

Methods: A cross-sectional study for seventy patients aged 10-18 years and diagnosed with type 1 diabetes mellitus before 2 years or more, visited the national diabetes center in Baghdad from February-September 2016. Estimation of pubertal staging, height, and weight was done; and comparison of these parameters with normal values for age and sex, with measurement of blood pressure and LDL level.

Results: Twenty-eight (40%) of patients were boys and 42(60%) were girls, 10 patients (14%) had short stature, 6 patients (9%) had delayed puberty, mean age of menarche was 13.6 years. The LDL and BMI were higher in girls and highly correlate with the blood pressure. There is a significant positive correlation of height and weight standard deviation with the puberty staging, and a negative correlation with the disease duration.

Conclusion: Delayed puberty still a problem for some patients with diabetes and there is a delay in the mean age of menarche for 0.75 years if compared to international charts, the long-term poor glycemic control can affect height and weight and will lead to delayed puberty.

Weight status and perceived body size image in overweight and obese children 8–12 years old

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Abstract

Young people's perception of their weight status has attracted much interest. With a better understanding of childhood body image problems, investigating prevention programs within schools is an important next step.

Objective: The aim of the study was to investigate body size perception in school children using verbal descriptor and BMI-calibrated visual-matching methods to examine associations between perceived and actual body size.

Methods: The subjects of this study were 106 school students (8–12 years old) from Khalidiyah region in Kuwait. Cross-sectional data on height, weight, and body image were collected in the classroom. Only overweight and obese children were assigned to participant with BMI percentile values for age and sex of >85 to <95 and BMI >95, respectively. Students selected a figure to represent their current images. Body image was measured using a body image tool with a sequence of seven body

Results: The results revealed that both verbal and visual scales overestimate overweight and underestimate obese ones. There is a predominance of underestimation rather than overestimation, especially in girls. Visual-matching could be considered a more precise measure of body size perception than verbal, which could explain the greater sensitivity to sex differences. Parents in general and of girls specifically underestimate the size of their children than boy's parents. The perception of friends of body size was underestimated. The majority of obese and overweight attributed their conditions to eating more foods. Those trying to lose weight did this through both reduction of amount of food.

Conclusion: These results indicated that children can estimate their body size with visual-matching and verbal-rating methods, but the degree of precision was more accurate by visual one. The verbal scale showed a tendency for children of all sizes to perceive themselves as normal or overweight.

Osteopontin levels as a marker for diabetic vasculopathy in children and adolescents with type 1 diabetes mellitus

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Abstract

Introduction: Diabetes results in both microvascular and macrovascular complications. Osteopontin(OPN) is suggested to be a player in the arterial disease of patients with type 2 diabetes(T2DM) and is associated with diabetic retinopathy and nephropathy.

The objective of the study: The objective of the study is to determine OPN levels in children and adolescents with type 1 diabetes mellitus (T1DM) as a potential marker for diabetic vascular complications and assess its relation to the carotid intima media thickness (CIMT) as an index for subclinical atherosclerosis.

Patients and Methods: Patients were subjected to detailed history, physical examination, laboratory investigation and radiological investigation including mean HbA1c, serum OPN level, CIMT and aortic intima media thickness (AIMT).

Results: We found that OPN levels were significantly increased in all T1DM patients compared with the control group (p=0.002), meanwhile CIMT and AIMT were significantly higher in patients compared to controls (P<0.001). When we compared patients with and without microvascular complications we found that FBG, HbA1c, serum creatinine, total cholesterol, UACR and hs-CRP were significantly elevated among patients with micro-vascular complications than those without (p<0.05), meanwhile osteopontin was significantly higher in patients with complications than patients without microvascular complications(P<0.001). Additionally, CIMT and AIMT were significantly increased in patients with and without micro-vascular complications compared with healthy controls and the highest values were found among those with complications (p<0.05).

Conclusion: OPN levels are elevated in children and adolescents with T1DM and the increase in OPN levels is more evident in patients with micro-vascular complications. Increased OPN levels may be considered as a potential early marker for micro-vascular complications.

Effects of Advanced Carbohydrate Counting in Children and Adolescents with Type 1 Diabetes: Royal Hospital Experience

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Abstract

Background: Carbohydrate counting is a recommended dietary strategy for achieving glycemic control in people with type 1 diabetes mellitus (T1DM).

Objective: We aimed to assess the efficacy of carbohydrate counting in glycemic control in children and adolescents with T1DM

Method: A sample of 114 children and adolescents aged 6-18 years with T1DM on multi-dose insulin injections were prospectively followed up at National Diabetes and Endocrine Centre (NDEC) from the beginning of 2013 to the end of 2016. Fifty-eight patients were convinced to adopt carbohydrate counting and assigned to the intervention group; and 33 were assigned to the control group which constituted of the routine dietary advice. The patients received 2-3 months follow up appointments and occasionally more frequent ones if required. The overall follow up period ranged from 1 to 4 years. The primary outcome of this study is HBA1c and was measured at 3 months from recruitment and subsequently every 6 months. Other measures being evaluated are hypoglycemia and some psychosocial influences.

Results: The analysis used two-tailed t-test to assess the significance of the differences between the means of the two groups. At baseline, the difference between the means of the HBA1c in the two groups were statistically not significant (M= 9.23, M(c)=9.57; t-value= - 0.75715 & p<0.05). On follow up, our study demonstrates favorable reductions in HBA1c in the intervention group and there is significant difference between the means of the HBA1c measures in the two groups. The difference ranges between 0.57 to 1.48% (p<0.05). The effect size is assessed throughout using Cohen's d (1988) method and range from 0.5 to 0.9 demonstrating medium to large effect. Hypoglycemic events is also significantly less in the intervention group (p<0.05).

Conclusion: Using of Advance carbohydrate counting along with blood glucose value to calculate insulin dose required per meal is a useful tool for better glycemic control and reduce hypoglycemia events.

The Frequency and The Precipitating Factors for Recurrent Diabetic Ketoacidosis in Children with Type 1 Diabetes Mellitus

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Abstract

Background: Diabetic ketoacidosis (DKA) is the final consequence and life-threatening complication of severe insulin deficiency in type 1 diabetes with occurrence of 20-40%.

The aim: To study the frequency and precipitating factors for recurrent diabetic ketoacidosis in children with type1 diabetes.

Patient and Methods: The study included patients with diabetic ketoacidosis who admitted to children's emergency unit, during the period from the1st September 2015 till the end of July 2016, a sample of ninety-one children, aged between 1 to 15 years. Thirty-seven patients, presented as first presentation of type1 DM and fifty-four patients were a known case, detailed history was taken, proper physical examination was performed and investigations were done to assess and treat the condition, and to find the precipitating factors.

Results: A total of 91 patients with mean age of 7.5±3 years, 37(40.7%) were male and 45(54.3%) were females, most of patients, 45 (49%) were 5-10 years old age, Fifty five (60.4%) of patients presented with severe DKA. Regarding the predisposing factors for recurrent DKA (27.8%) of cases were caused by infection and non-compliance with diet, followed by (20.4%) non-compliance with diet. Seventy-nine (86.8%) presented with acidotic breathing, 65 (71.4%) with vomiting, and 63 (69.2%) with nausea, There was significant association between frequency of DKA and age group (p=0.01), and duration of diabetes (p=0.02).

Conclusions: Most patients presented with severe DKA and to lesser extent with moderate DKA. Infections and non-compliance with diet were the main precipitating factors for recurrent DKA. There was significant association between frequency of DKA with increasing age group, and duration of diabetes. There was no significant association between frequency of DKA and gender, severity of DKA, glycosylated Hemoglobin.

Satisfaction of Patients with Type 1 Diabetes Mellitus on Freestyle Libre Sensor

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Abstract

Self-monitoring of blood glucose levels requires intermittent capillary blood sampling and a blood glucose measurement device. However, many patients experience barriers to frequent testing, among others including the pain and discomfort associated with the finger-stick blood samples along with accumulated trauma to the fingers. Also, intermittent blood glucose monitoring through intermittent capillary blood sampling provides only snapshots of glucose concentrations.

Objective

To measure patient's satisfaction on free style Libre sensor.

Research Design and Methods

The methods used to obtain data include questionnaires and through direct interviews with the patients of type 1 diabetes on free style libre. 20 patients took part in the research by responding the 20 questionnaires provided. Some of the questions in the questionnaires included enquiring the patients' perceptions of the freestyle libre sensor in the management of type 1 diabetes. The responses in the questionnaires were then collected and analyzed. All the patients included on the study were type 1 diabetic children.

Results

Most children did not feel any discomfort under the skin while wearing the Free Style libre sensor, few of them had skin irritations. Nocturnal hypoglycemia episodes were less. Lesser pain from finger pricking. Some of the parents questioned the accuracy of blood sugar readings. Compliance was better and HBA1C readings improved in small group of the patients.

Conclusion

Owing to the satisfaction of children in the new and improvised glucose monitoring method, the freestyle sensor should be made available, accessible, and affordable to such populations.

Diabetes Self-Management Education; Effectiveness In Group Education in Management of Type 2 Diabetes

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Abstract

Background: Diabetes Self-Management Education (DSME) is recognized as a fundamental component of diabetes care. DSME can be delivered in many forms. Group-based education differs from individual learning methods by using an interactive group session.

Aim: To explore the reported effects of different group based education for people with type 2 diabetes mellitus (T2DM) in term of HbA1c.

Method: A literature study was conducted. Three electronic databases Medline, PubMed and CINAHL were searched for evidence of primary studies published from 2010 till 2014.Total of 5 articles were retrieved. Three were quantitative randomized controlled trials and 2 interventional clinical studies. Eligible Participants were adults with T2DM.

Results: Four out of five reviewed studies reported significant reduction in HbA1c values with the group education intervention (P value <0.05). Four out of five reviewed studies represented the delivery of the educational session by a multidisciplinary team or well-trained health educators. All studies reported the use of interactive educational methods for the group based sessions. One reviewed study, reported no significant difference in mean HbA1c values (P value <0.967) between the control and intervention groups in which group education delivered by health promoters who were less qualified mid-level health workers.

Conclusion: Group based education for people with T2DM have been shown to be effective in terms of HbA1c values. Moreover, the background of the professional who delivered intervention and the educational method during the group education session could impact the education outcomes. It recommends that group education for people with T2DM be delivered by well-trained health care professional with a multidisciplinary team and to use several interactive educational methods

Epidemiological Features of Type 1 Diabetic Jordanian Patients up to 18 Years Of Age

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Abstract

Objective: To evaluate the epidemiologic, clinical and laboratory characteristics of a group of children with type 1 diabetes mellitus (T1DM) from Jordan.

Methods: The study was retrospective chart review from 2012-2016. The data were assessed by gender and age subgroups (≤5, 6-10 and ≥11 years). Medical records of 436 (boys/girls: 224/212) children with newly diagnosed T1DM were evaluated and analyzed.

Results: Mean age of children at diagnosis was 7.3±3.6 years. At T1DM onset, the number of children ≤5, between 6-10 and ≥11 years old was 166 (38.5%), 182 (42.2%) and 83 (19.3%), respectively. The patients were mostly diagnosed at ages 6-8 years (26.5%), followed by cases aged 3-5 years (25%). Polyuria and polydipsia were the most common symptoms 92.9% and 87.4 % respectively. Mean duration of symptoms was 13.3±12.8 days. Although the patients mostly presented in Winter (29.5%), no season-related significant differences were found. The frequency of ketoacidosis was (39.1%). When compared to boys, the girls experienced higher frequency of glutamic acid decarboxylase antibodies and islet cell antibodies (62.3% vs. 50.7%, p=0.047) and (25.9% vs 14.4%, p= 0.024) respectively. Girls also had a higher frequency of anti-thyroid peroxidase antibodies (23.4% vs. 12.4%, p=0.024). In addition, girls were more likely to have a family history of type 1 diabetes (16.5% vs 7.1%, p= 0.023).

Conclusion: The findings indicate that there is an earlier onset of T1DM onset in Jordanian patients. Girls had higher frequencies of glutamic acid decarboxylase, Islet cell and thyroid peroxidase antibodies. The high frequency of ketoacidosis at presentation is note worthy.

Trends of Diabetes in Children and Adolescents In Pediatric Endocrinology Clinic and Clinical Pediatric Diabetes Center

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Abstract

Objectives: This study describes and compares the epidemiological criteria of children with diabetes from 2007 to 2014.

Methods: A prospective study conducted with 372 children with diabetes mellitus. An access program was used for data collection, and SPSS 17 was used to analyses the results.

Results: A total of 372 cases with diabetes were studied and were divided into three groups according age. The first age group was between one day and six years and comprised 128 (34.4%) patients. The second group aged 7- 12 years of age comprised 174 (46.7%) patients. The third group aged 13-18 years of age comprised 58 (15.59%) patients. The average age was 8.32 years. Females constituted 52 % (194 cases) of all cases. T1DM constituted 95.4%, equal to 355 patients, T2DM constituted 1.88%, equal to seven cases. Monogenic diabetes affected three patients or 0.79%, with one case of monogenic neonatal diabetes confirmed by genetic study, and two other cases suspected to be MODY. The highest incidence was observed in the autumn months, with 105 children affected, constituting 27.8 % cases. The year 2012 had the highest incidence rate, with 59 children and adolescents affected at an incidence rate of 25.48 / 100000.Al-Baha region had the highest number of cases constituting 37.7 % of cases. Diabetic ketoacidosis was the first presentation and constituted 44.2% of cases.

Conclusion: Diabetes in children is increasing significantly in recent years, requiring more detailed analysis of its epidemiological factors to find out any significant correlations which may help in its prevention.

Retrospective Study on High and Stable Incidence of Childhood Type 1 Diabetes

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Abstract

Background: We have previously found that the incidence of childhood type 1 diabetes in Al-Madinah city during 2004 - 2009 is among the highest reported worldwide.

Objective: To define the incidence rate (IR) of childhood T1DM in Madinah during 2004-2013, and to assess IR and temporal trends during 10-year period.

Methods: All newly diagnosed T1DM aged 0-12-yr living in the city between 2010 and 2013 were identified from various sources. The data were combined with published results of 2004-2009 and the 10-year period (2004-2013) were analyzed according to age, sex, and month of presentation.

Results: In total, 730 children (419 girls) were diagnosed between 2004 and 2013 inclusive. The mean age at diagnosis was 6.8 ± 3.5 yr. The mean annual crude IR was 27.4, age standardized IR was 28.5. The incidence was significantly higher in the 10-12-yr age group than in younger children and higher in girls than in boys. There was no significant increase in the annual incidence during

the 10 -year period and more cases were diagnosed during autumn and winter months.

Conclusion: The incidence of childhood T1DM in Al-Madinah city is among the highest reported in the world. There was no significant change in the IR over the 10-yr period.

Vitamin D level at various stages of Type 1 diabetes mellitus in children

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Abstract

Background Type 1 diabetes mellitus is an autoimmune disease in which pancreas is unable to respond to secretagogue stimulation with appropriate insulin secretion. Hyperglycemia develops when more than 70-90% of the insulin producing beta cells are destroyed, an autoimmune destructive process, which plays a significant role in the development of Type 1 diabetes mellitus is facilitated by the persons own genetic susceptibility and non-genetic factors. Non-genetic factors include viruses, cow's milk protein, toxic chemicals and others. During recent years, there has been increasing interest in immunomodulating actions of vitamin D in Type 1 diabetes mellitus and other autoimmune diseases. Earlier studies in humans depended on reports suggesting that vitamin D supplementation during the first year of life may be associated with reduced risk of Type 1 diabetes mellitus.

Objectives This study was performed to find out the difference between level of vitamin D in children with Type 1 diabetes mellitus and healthy children of same age and gender, and to assess the level of vitamin D at onset, at honey moon period and in diabetic children of long duration, and to find out their correlation to fasting blood glucose, Glycated hemoglobulin (HBA1c), C-peptide and parathyroid hormone levels.

Patients and methods A case–control study conducted from November 2013 to October 2014.The study included one hundred and twelve children, eighty-three children with Type 1 diabetes mellitus and twenty-nine healthy children as a control. The measurements of fasting blood glucose, HbA1c, blood urea, creatinine, serum calcium, phosphorus, alanine aminotransferase, parathyroid hormone, C-peptide, 25 (OH)D and 1,25(OH) 2D3. Statistical analysis was done using SPSS version 17.

Results

The study showed that the percentage of vitamin D deficiency in control group was only 4%, but in diabetic patients group was 37.35% and in females was 62.30% while in males was 37.70%, the current results revealed that vitamin deficiency was significantly higher in all diabetic children in comparison with healthy control group at (P <0.001). The mean +SD of serum 1,25 (OH) 2D3 for newly diagnosed T1 diabetic children was (21.09 +4.93 Pg /ml), for diabetic children at honey moon period was (33.49+4.45Pg/ml) for diabetic children of long duration was(25.2+2.6 Pg/ml) and for healthy children (43.28+20.85Pg/ml).The mean +SD values of serum 25(OH) D for newly diagnosed Type 1 diabetes mellitus was (63.0+14.1nmol/l),for honey moon period was(76.76+12.2nmol/l) ,for diabetic children of long duration was (71.32+4.82nmol/l) and for healthy children was (92.52=16.38). All the results had significant negative correlation with fasting blood glucose, parathyroid hormone level, but no significant negative correlation with HBA1c, but significant positive with C-peptide.

Conclusion

The prevalence of vitamin D deficiency in diabetic children is considerably high in comparison to control, and females were at more risk for vitamin deficiency, and vitamin D was low at onset followed by diabetes of long duration but was higher in honey period.

Wolcott Rallison Syndrome in the Kingdom of Saudiarabia; A Review

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Abstract

Wolcott Rallison Syndrome (WRS) is the most frequent cause of Permanent Neonatal Diabetes Mellitus (PNDM) in consanguineous families. In literature review, fewer than 60 cases have been describe this entity, while the largest collection of patients reported KSA (27%). The main presentation was Neonatal/early-onset non-autoimmune insulin-requiring diabetes (100%) -mean age of 15 weeks- followed by subsequent features that characterize WRS such as recurrent hepatic dysfunction (73%), skeletal dysplasia (57%), thyroid dysfunction (26% mainly central hypothyroidism rather than euthyroid sickness). Less than 1% of Saudi patients presented with growth retardation, neutropenia and renal dysfunction while the pancreatic exocrine function was not tested in any of published cases. WRS cause by homozygous for nine different EIF2AK3 mutations that lead to loss of PRKE expression, which believed to be an essential requirement for fetal B cell development and function manifesting as neonatal DM. Of these mutations, eight were confined to Saudi families. The clinical diagnosis strongly considered in any infant present with neonatal DM in highly consanguine population and subsequent radiological assessment is highly recommended to detect early sign of skeletal abnormality.

Management of these patients need a multidisciplinary team including an Endocrinologist, a gastroenterologist, a medical geneticist, and orthopedic surgeons in addition to genetic counselor.

From Endocrinology point of view, close therapeutic monitoring is needed to avoid hypoglycemia and diabetic ketoacidosis. Insulin pump is highly recommended to prevent hypoglycemia with low threshold for tight glycemic control. One reported case show an improvement of glycemic control following liver transplant as a management of acute fulminant hepatitis only in UAE. This disease has a poor prognosis and acute fulminant hepatitis was the main cause of death in all deceased patients from KSA. A national and international registry of WRS and PNDM based on regular surveys would raise awareness of the condition, provide accurate data, and help in clinical management".

Vitamin D status among Iraqi children and adolescent with T1DM

Mohammed Fares*

Iraq

***Corresponding author:** Diabetes & Endocrine Unit, Pediatric Hospital, Karbala, Iraq

Abstract

Objectives: To evaluate 25(OH) vitamin D levels among children and adolescent with T1DM.

Methods: A prospective cross-sectional study, 90 patient (45 male and 45 female) aged 5 to 16 years with T1DM, from two diabetic centers in two governorates in the middle of Iraq were evaluated for serum 25(OH) vitamin D levels, as a normal serum level is 30-50 ng/ml, and insufficiency classified as suboptimal, deficiency and severe deficiency as 20-29 ng/dl, 10-19 ng/dl and less than 10 ng/dl respectively.

Results: Serum 25(OH) vitamin D was significantly lowered in the patient population. Of the 90 patients, 80 (88.9%) had vitamin D insufficiency. 43 (95.6%) of females with diabetes had insufficiency classified as 3 (7%) with suboptimal, 15 (34.9%) with deficiency and 25(58.1%) with severe deficiency. Male showed 37 (82.2%) with insufficiency, classified as 16 (43.2%) with suboptimal, 12 (32.4%) with deficiency and 9 (24.3%) with severe deficiency.

Conclusion: Vitamin D insufficiency is common in the diabetic children and adolescent with the predominance of female patients. Further studies, needed for other areas in Iraq to estimate the prevalence of condition and to evaluate the effect of such deficiency on glycemic control.

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Conclusion: Vitamin D insufficiency is common in the diabetic children and adolescent with the predominance of female patients. Further studies, needed for other areas in Iraq to estimate the prevalence of condition and to evaluate the effect of such deficiency on glycemic control.

Love as an Obstacle. What can we do?

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Kuwait

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Type 1 diabetes is a unique condition, among chronic diseases of childhood in terms of treatment plan and the follow up of a patient. This can be challenging to deal with for both families and the health care team.

To succeed, one needs to build up a good relationship between both parents and health care professionals to manage it successfully. Meanwhile avoiding complications and providing sufficient care for the child during certain illnesses. In this presentation, we are going to discuss the ethical issue of parental care when it comes to refusing certain medical treatments and how one can deal with this challenge.

Delegates' Case Presentations Abstracts

Mutation in the EIF2AK3 Gene in A Palestinian Family with Wolcott-Rallison Syndrome

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Abstract

Background: Wolcott-Rallison syndrome (WRS) is a rare autosomal recessive disorder characterized by the association of permanent neonatal or early infancy type 1 diabetes mellitus, multiple epiphyseal dysplasia, growth retardation, and other variable multisystemic clinical manifestations. WRS results from mutations in the gene encoding the eukaryotic translation initiation factor 2 α-kinase 3 (EIF2AK3). This enzyme phosphorylates EIF2A to regulate the synthesis of unfolded proteins in the endoplasmic reticulum.

Clinical Data: A Palestinian infant, born to consanguineous parents, presented with early infancy type 1 diabetes mellitus, hypothyroidism, short stature, failure to thrive, multiple skeletal epiphyseal dysplasia, elevated liver enzymes and hepatomegaly. Wollcot-Rallison syndrome was suspected and confirmed by molecular testing.

Molecular Data: DNA sequencing of the EIF2AK3 gene for the patient revealed a novel stop codon mutation, with replacement of Arginine (CGA) to stop codon (TGA) in codon 826.

Conclusion: The description of this disease in a Palestinian family with molecular confirmation, reinforcing the pathogenic significance of loss of the kinase domain in determining the extended phenotype of WRS, allowing accurate genetic counseling, early diagnosis of affected kindred's, early therapeutic interventions and avoiding complications.

Does Bariatric Surgery for Obese Patients Completely Improve Their Comorbidities?

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Background

Obesity is a complex disorder involving an excessive amount of body fat. Obesity is not just a cosmetic concern. It increases your risk of diseases and health problems, such as heart disease, diabetes and high blood pressure. Being extremely obese means you are especially likely to have health problems related to your weight. The good news is that even modest weight loss can improve or prevent the health problems associated with obesity. Dietary changes, increased physical activity and behavioral changes can help to lose weight. Prescription medications and weight-loss surgery are additional options for treating obesity.

Case report

The 30-year-old male patient with type 2 diabetes who was referred by his primary care physician to the weight center for an evaluation of his obesity and recommendations for treatment options, including weight-loss surgery. The weight center has a team of obesity specialists, including an internist, a registered dietitian (RD), and a psychologist, who perform a comprehensive initial evaluation and make recommendations for obesity treatment. The patient presented to the weight center team reluctant to consider weight-loss surgery; he is a radiologist and has seen patients who have had complications from bariatric surgery.

Conclusion

One-year post-surgery, the patients weight was 120.2 kg, he had lost 35.3 kg since the surgery, and his weight loss had significantly slowed, as expected. He was no longer taking nifedipine or lisinopril but was restarted at 5 mg daily to achieve a systolic blood pressure < 120 mmHg. The patient had significantly benefited from undergoing RYBP surgery. By 1-year post-surgery, his BMI had decreased from 46.6 to 35.8 kg/m2, and he continues to lose weight at a rate of ~ 0.9 kg per month. His diabetes, sleep apnea, and hypercholesterolemia were resolved and he was able to control his blood pressure with one medication.

Iatrogenic Hyperglycemia

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Opinion

Iatrogenic diseases can be caused by a number of factors and in most cases, they present as a variety of symptoms than a full clinical presentation of a disease. A complication after surgery or another medical procedure could be classified as an iatrogenic disease. It could be a result of error or negligence on the part of the surgeon, doctor or nurse, or pharmacist, unnecessary treatment or due to unforeseeable circumstances. In fact, iatrogenic disease due to adverse side effects of drugs, not error, is the most common type of iatrogenic disease documented worldwide.

I report a nine years old Libyan boy from Al Khomes City (120 kilometers east to the capital Tripoli) who was transferred by ambulance to Al Khadra Hospital, Tripoli. He arrived to our Emergency room in a comatose state. He was immediately admitted to PICU and intubated.

The history of this patient was diagnosed by primary care physician with moderate acute gastroenteritis where he was advised to receive 0.45% Saline, 5% dextrose, Intravenous Fluid (IVF), but was unfortunately given 50% Dextrose instead. Finally, the patient received 300cc of 50% Dextrose for over an hour and was discharged. An hour or so after discharge, he returned to the hospital agitated, and in n delirious state. The patient was then stabilized and transferred to Al khadra hospital in Tripoli.

Conclusion

This is a clear conduct of error and negligence of iatrogenic adverse effects of drugs which was avoidable.

An Interesting Case of MODY

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Abstract

Maturity-onset diabetes of the young (MODY) is a subtype of monogenic diabetes which is a rare form of diabetes result from mutations in a single gene. It is characterized by young age of onset and the inheritance of autosomal dominant fashion. There are several types of MODY that share the same characteristics with different genes mutation. Here we report, a patient with 2 different mutations all known to cause different types of MODY. Patient presented with incidental finding of high blood sugar and symptoms of polyuria and polydipsia. He has family history on both the maternal and paternal side diagnosed with Type 2 diabetes at a young age. He required only small doses of insulin during hyperglycemic state otherwise he is doing well. His genetic study showed a mutation in 2 different genes.

Neonatal Diabetes: An Interesting Case Scenario

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Abstract

Neonatal diabetes mellitus (NDM) is a type of diabetes that first appears within the first 6 months of life. Genetic studies have greatly improved our understanding of the causes and pathophysiology of NDM, it is caused by mutations mostly affecting insulin synthesis and release, according to the type of mutation we can decide the appropriate treatment and avoid a lot of complications, a fact which makes molecular diagnosis a very valuable step in diagnosis of NDM. This case presentation draws attention to genetic testing for NDM, which has greatly affected the middle eastern patients and the life of their families, and the need to consider molecular diagnosis in all cases of neonatal diabetes.

Abdominal Pain and Hyperglycemia; not Always Diabetic Ketoacidosis

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Abstract

10-year old female presented with abdominal pain and vomiting. Her Random Blood Sugar was high, acidosis, +3 urinary glucose, and +1 urine ketone. Initially diagnosed as diabetic ketoacidosis and with treatment improve hyperglycemia and acidosis but continue to have abdominal pain surgical consultation done that diagnose as mid gut volvulus and not DKA, HbA1C was normal. It is important to highlight that Abdominal pain, hyperglycemia and acidosis is not always Diabetic Ketoacidosis

Hyperglycaemic Hyperosmolar Syndrome in 5 Years Old Girl

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Background

Hyperglycaemic hyperosmolar syndrome (HHS) is a life-threatening condition with high morbidity & mortality rates. It is commonly used to be seen in adults with type 2 diabetes mellitus (T2DM). However, reported HHS cases in paediatric population worldwide had been increased due to increasing incidence of obesity & T2DM in this population. We are reporting here the youngest age presenting with HHS in a newly T2DM as per recently published peer reviewed reports.

Case report

Our patient is a 5years old Sudanese girl with history of recurrent craniopharyngioma, status post two times debulking and radiotherapy, panhypopituitarism with central diabetes insipidus, hypothyroidism and cortisol deficiency and morbid obesity. She is on hydrocortisone at maintenance dose, desmopressin & levothyroxine. She presented to the emergency department with history of decreased activity, headache and drowsiness for one-day duration. On examination, she had been found to have a compensated shock with moderate dehydration. She had acanthosis nigricans as well with BMI 35kg/m2 (>97th percentile). Her labs showed picture of HHS and acute renal impairment due

to the dehydration. Once started on fluids followed by insulin, she had been clinically improved. Her follow up labs later confirmed the T2DM diagnosis.

Conclusion

We are reporting a 5years old girl with HHS and newly diagnosed T2DM, which is the youngest age so far, to present with HHS in T2DM as per current publications. This should make us vigilant towards identifying HHS, now that it could manifest at any age and it should be considered whenever the patient presents with the criteria of diagnosis for early aggressive management to avoid the morbidity and mortality of this syndrome.

Hypokalemia in Diabetic Ketoacidosis: Case Report

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Abstract

Introduction: The total body potassium level is always low in patient with diabetic ketoacidosis (DKA) as a result of renal and gastrointestinal loss. Although most patient present with high or normal potassium values, low potassium level can be seen and necessitate early potassium replacement.

Case presentation: 5 years old Kuwaiti girl, who was previously healthy, presented with polydipsia, polyuria, abdominal pain and weight loss. On examination, she was found to be dehydrated and had mild epigastric tenderness. Initial laboratory investigations revealed the presence of severe DKA and hypokalemia. Though parenteral potassium replacement with 40mEq/L after normal saline bolus, the patient continued to have hypokalemia and required to be replaced with 60mEq of KCL for 48 hours.

Conclusion: Early replacement of potassium following normal saline bolus and continuous monitoring of potassium level are necessary in patient presenting with DKA. The goal is to reach normal total potassium levels and protect the heart. Parental potassium replacement at a concentration of 60mEq/L using peripheral lines can be reached in special circumstances.

An Interesting Case of Prader Willi Syndrome

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Abstract

Prader Willi syndrome (PWS) is a rare complex multisystem imprinting genetic disorder characterized by hyperphagia, obesity, particular clinical features, short stature, mental deficiency and hypogonadism.

Case report: A 12-year old boy was referred to our clinic for polyuria-polydipsia syndrome and obesity. He was born to consanguineous parents at 32 weeks of amenorrhea (BW:1500g (-0.6 SDS). He had history of neonatal hypotonia and developmental delay. The Obesity was noticed from the age of 2 years and was due to severe hyperphagia.

At clinical examination, Height was 141cm (-1.21 SDS), Weight was 97kg an BMI was 48.8Kg/m2 (+5.9 SDS). He had a narrow face, with almond eyes, plethoric abdomen, micro phallus, cryptorchidism and small hands and feet. His leg's skin was bruised and he had slight mental retardation. The clinical presentation was consistent with Prader Willi syndrome. The diagnosis was confirmed by genetic analysis (absence of the paternal SNRPN locus).

Investigations showed elevated fasting glucose (2.5g/l), glycosuria with high insulin levels (17 to 58 UI/l), HbA1c was high (11%). The diagnosis of type 2 diabetes was established and the patient was treated with metformin.

Despite the treatment, the weight increased gradually and the glycaemic control was poor.

The patient is now 19-years old, he has been switched to insulin regimen to improve glycaemic control but unfortunately the weight continues to increase.

Discussion: Prevention of obesity remains the most important goal of PWS treatment. Early identification of metabolic syndrome could be helpful to improve the morbidity and the mortality in those patients.

A Rare Complication of Diabetic Ketoacidosis

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Abstract

Background: Diabetic ketoacidosis (DKA) has been reported to be a risk factor for the occurrence of stroke in children and youth.

Case report: An 18-years-old female, a known case of primary hypothyroidism; on thyroxin 150 mg and well controlled; presented with a 2-weeks history of progressive fatigability, polydipsia and polyuria with a one-day history of deterioration of consciousness. Her initial assessment revealed unconscious child, tachypneic with moderate dehydration. Her initial Random Blood Sugar was 395 mg/dl with urinalysis revealing ketonuria and glycosuria. The girl was admitted as a case of newly discovered type 1 DM with DKA; started on fluid resuscitation and insulin treatment. One day later, she regained her consciousness but she developed bilateral calves pain with black discoloration of her toes on the left side.

Doppler Ultrasound revealed right superficial femoral artery and left popliteal artery thrombosis. Magnetic resonance Imaging (MRI), angiogram (MRA) and Venography (MRV) brain were normal. She was investigated for a possible cause of thrombosis; lipid profile, bleeding profile and echocardiography were normal.

Planned for other hypercoagulable screening.

Vascular surgeon and hematological opinion were taken; she was started on low molecular weight subcutaneous heparin with improvement.

Conclusion: Vascular thrombosis in Diabetic Ketoacidosis is uncommon but is life-threatening.

Acute Kidney Injury in Patients with Diabetic Ketoacidosis

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Abstract

Background: Acute kidney injury (AKI) is a rare but serious complication of diabetic ketoacidosis (DKA). Etiology of AKI in patients with DKA is multi factorial. Dehydration, hypovolemia and kidney hypo-perfusion are the most important factors contributing to renal involvement. The mortality rate is as high as 50%, so early recognition and quick, aggressive management will help to improve the kidney function and hence decrease the progression to severe renal involvement in these patients.

Objectives: To highlight on Acute Kidney Injury as one of most serious complication of DKA and to discuss difficult aspects of management including insulin therapy during dialysis.

Patients & methods: Four patients were admitted with severe DKA. Renal impairment was a complication either at presentation or later during the management process. We describe their initial presentations, degree of renal involvement and address difficult aspects of management.

Results: Two out of four patients unfortunately died, one of whom after renal replacement therapy. The other two survive with full recovery and have regained their normal renal function.

Conclusion: Early recognition, proper fluid management and early renal intervention therapy will improve the poor outcome in these patients. Multidisciplinary team approach is needed and early liaise with other team members including pediatric nephrologist is necessary. Management of DKA patients with AKI is challenging as many difficulties are encountered, especially fluid management.

Berardinelli-Seip Congenital Lipodystrophy in a Yemeni Infant

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Abstract

Background: Generalized Congenital Lipodystrophy also known as Berardinelli-Seip is a rare metabolic disorder characterized by dermatological manifestations such as a canthosis nigricans and hypertrichosis in addition to systemic manifestations like generalized complete absence of subcutaneous fat and muscle hypertrophy, dyslipidemia, insulin resistance, hepatosplenomegaly with cirrhosis and acromegaly. The onset is in the neonatal period or in early infancy.

Case report: We report a 2-month-old infant with clinical and metabolic manifestations of Berardinelli Seip syndrome including uncontrolled high blood glucose despite being on Insulin infusion, absence of adipose tissue, hyper triglyceridemia and hepatomegaly.

Conclusion: Berardinelli Seip syndrome is a progressive multisystem disease and affected patients require appropriate follow up as diabetes mellitus can develop in adolescence. Furthermore, diabetic renal failure, liver cirrhosis and cardiomyopathy can lead to significant morbidity and mortality.

Early identification of the disease will help in the initiation of appropriate management such as lifestyle modifications and pharmacotherapy. This aids in postponing unfavorable outcomes.

A Typical and Syndromic Diabetes

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Abstract

Diabetes mellitus is a disease with a very heterogeneous etiology. Concerning children and adolescents, they generally have classical autoimmune type 1 diabetes. However, there are some rare atypical and syndromic forms of diabetes that have been described, like the monogenic diabetes.

We report a 12-years-old boy, admitted to our department for generalized convulsive crisis. He was followed for bilateral nystagmus since birth, and he developed bilateral blindness at the age of eight years. The parents were consanguineous, and the family's history was negative for diabetes mellitus in parent's pedigree. Concerning the siblings; a sister aged 6 years had a unilateral congenital cataract and decrease in visual acuity of the contralateral eye. The patient's weight was; 45 kg (SDS: + 1.5), height; 142 cm (SDS: - 0.70), BMI; 22,3 Kg/m2 (SDS: + 1.5), and he had a precocious puberty. Laboratory data showed, hyperglycemia 3.6 g/l, glycosuria, urine ketone was negative, HbA1c; 10.27%, insulin and c-peptide was normal and with absence of β-cell auto-antibodies. Fundus photography showed megalocornea and diffuse pigment alteration with osteoblast migration. Magnetic Resonance Imaging (MRI) showed atrophy optic. Currently, our patient is on diet, Metformin, and Sodium Valproate (Depakine).

Conclusion: The combination of optic atrophy and diabetes mellitus before the age of 20 years is considered diagnosis of wolfram syndrome. Endocrinology impairments are described in wolfram syndrome; hypogonadism is a classic manifestation in this syndrome, however precocious puberty is an unusual symptom. Thus, the association of diabetes mellitus, optic atrophy, epilepsy and precocious puberty, is unusual in wolfram syndrome. Could it be an incidental association or another syndrome? Accurate etiological diagnosis of atypical and

syndromic diabetes is useful as it can lead to marked improvements in patients care and genetic counseling.

A Case of Neonatal Pancreatic Agenesis

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Abstract

Case report: An underweight neonate was presented with poor feeding, dehydration, fever and hyperglycemia. Diagnosis of sepsis was made, but, urine analysis revealed glucose and ketone bodies, glycosylated hemoglobin was found to be 8.9% and serum insulin was low to reference. Magnetic resonance imaging of the abdomen revealed hypo plastic pancreatic tissue. Frequent stools following breastfeeding also suggested an associated pancreatic exocrine deficiency.

Conclusion: Pancreatic hypo plasia is a rare cause of neonatal Diabetes Mellitus (DM)and is not always associated with intrauterine growth retardation, brain anomalies nor cardiac problems. It is a clinical entity, which develops due to mutations in insulin promoter factor-1 (IPF-1) gene and pancreas transcription factor 1 alpha (PTF1A). Moreover, neonatal DM due to pancreatic hypoplasia associated with DKA may mimic sepsis and this should be kept in mind in all newborns who present with fever, dehydration, and weight loss.

Diabetic Ketoacidosis

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Background

Diabetic ketoacidosis (DKA) is an acute, major, life-threatening complication of diabetes. DKA mainly occurs in patients with type 1 diabetes, but it is not uncommon in some patients with type 2 diabetes. DKA is a state of absolute or relative insulin deficiency aggravated by ensuing hyperglycemia, dehydration, and acidosis-producing derangements in intermediary metabolism. The most common causes are underlying infection, disruption of insulin treatment, and new onset of diabetes. It is defined clinically as an acute state of severe uncontrolled diabetes associated with ketoacidosis that requires emergency treatment with insulin and intravenous fluids.

Case Report

We report a 7-year-old female who presented to the hospital with persistent vomiting, sore throat and abdominal. She was diagnosed with an acute pharyngitis and discharged. The child came back the day after due to persistence of these symptoms accompanied by dehydration. She was given multiple doses of antiemetic and antispasmodic for her condition. It was only after 1 day and 5 hours after her admission that she was diagnosed with diabetic ketoacidosis, and at this stage she was almost in a state of shock. She was treated appropriately and made a full recovery, but despite this her outcome was unfortunate.

Conclusion

With this case report we aim to emphasize the key points in recognizing DKA, and provide recommendations in its management, such as: Always have a high index of suspicion, thorough interpretation of investigation and their results, involving a multidisciplinary team, recurrent presentations with persisting complaints should always raise a red flag, when in doubt, doctors should seek senior help and avoiding symptomatic treatment in the undiagnosed patient.

Diabetic Ketoacidosis: Case Presentation

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Case Report

8-year-old girl presented with abdominal pain for the past 24 hours with few non-bilious vomiting, excessive thirst, frequent micturition, and tiredness for 2 weeks. Initial exam showed her to be severely dehydrated with acidotic breathing. Initial evaluation showed marked metabolic acidosis (pH 7.05, pCO2 22, Bicarbonate 8, BE -24.4, Lactate 3.5) with gross hyperglycemia (glucose 31 mmol/L). Na 134, K 4.4, cl 102, coO2 5. HbA1c 16.4%.

She was managed as per standard protocol with Normal Saline bolus, insulin at 0.1 units/kg/h from end of first hour and fluid management with deficit correction (over 48 hours) and hourly maintenance (initially 0.45NS and Kcl, later with dextrose 5%+0.45NS and Kcl).

She showed gradual improvement in hyperglycemia, acidosis, dehydration. Insulin infusion titrated and was changed to subcutaneous insulin at 20 hours along with diabetic diet. Subcutaneous insulin was adjusted for next 48 hours in the ward along with diabetic educator/dietitian input. She was discharged on day 4 with follow-up arrangement with endocrinologist.

Diabetes Mellitus and Juvenile Dermatomyositis an Unusual Association

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Background

Type 1 Diabetes Mellitus (T1DM) is an organ specific autoimmune disease. They are other autoimmune conditions such as Juvenile Dermatomyositis (JDM), which is an uncommon inflammatory disease with manifestations in skin and skeletal muscles. The association of T1DM with JDM is rare. Only 2 case were reported worldwide

Here we have a 10 years old diabetic girl who develop JDM and treated successfully.

Case Report

10 years old girl with T1DM treated for 4 years on insulin with unremarkable past history. She presented with difficult in walking upstairs and brushing her hair and she developed skin rash which on her cheeks, followed by her knuckles and extensor surfaces of elbow and extensor surfaces of the knees, eventually over the eye lids as well.

On examination, there was no evidence of arthritis, mild muscle tenderness in the quadriceps. Power was 4/5 in all proximal muscle groups, 5/5 in distal muscle groups. Upper limb muscle power was 5/5. Skin, mild malar rash with redness of eye lids. There were scaly red plaques over knuckles, extensor surfaces of elbows and knees has red discoloration.

Investigation

White blood Cell (WBC) 17.93 × 10*3/uL (Neutrophil 51.6%). Erythrocyte sedimentation rate (ESR) & C-reactive protein 38 mm/hour & negative respectively. Creatinine kinase 309 IU/L (26-140). MRI of thigh was suggestive of dermatomyositis.

She was diagnosed as juvenile dermatomyositis based on clinical presentation, high muscles enzyme and muscle MRI finding. She was treated with oral prednisolone.

Conclusion

The clinician must always keep in mind that the association of T1DM with JDM may also exist.

Familial Insulin Resistance and Prediabetes

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Introduction

This 7years old patient was referred to our clinic as a case of prediabetes and insulin resistance diagnosed at the age of 6 years in Egypt. Her investigation revealed evidence of insulin resistance (Homeostasis Model Assessment (HOMA) test IR=9.9). (>2 resistant) HbA1c=5.89%. Fasting insulin 30 IU/ml. (3-28 N). Fasting C peptide 2.33 (2.73-5.64). Fasting Blood Glucose =7.3 mmol. She was started on diet and metformin 1000 mg. Her HOMA test Improved to 1.1. And hbA1c improved to 5.5%.

Her elder sister, aged 13 years old was referred to us as a prediabetes case with HbA1c =6.1%. The sister was tall and lean in her appearance with mild acanthosis nigricans and history of delayed menarche. No evidence of hirsutism or acne. Her fasting Blood Glucose was 5.1 mmol/l. Fasting C peptide 941 pmol/l, fasting insulin level was 10.42 IU/ml. Thyroid Function Test was normal. Ultrasound abdomen was suggestive of Polycyctic Ovarian Disease. A hormonal assay was conducted to rule out or confirm hyperandrogenism, we are still pending results.

Interestingly these two young lean siblings have significant family history of Insulin Resistance and type 2 Diabetes Mellitus. In both mother and maternal grand-mother had diabetes at age of 33. The mother had history of Gestational Diabetes Mellitus followed by diabetes and insulin resistance syndrome with fatty liver, dyslipidemia, irregular period with Polycystic Ovarian Syndrome. The mother is not obese and has mild acanthosis nigricans on her neck.

In summary, diabetes and insulin resistance when present in the family with perpendicular descent affecting the children, should it be considered as insulin resistance as prediabetes for type 2 or more likely due to genetic defect in insulin action.

Most probably, the milder form type A insulin resistant. Both sisters were referred to Desman Centre for genetic work up.

Acute Pancreatitis and Diabetic Ketoacidosis (DKA) After L-Asparginase Treatment for Acute Lymphoblastic Leukemia (ALL)

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Background

Acute pancreatitis and diabetic ketoacidosis (DKA) are unusual adverse events following chemotherapy based on L-asparaginase and prednisone as support treatment for acute lymphoblastic leukemia (ALL).

Case Report

Our case is a 14 years old Egyptian girl presented to ER with severe abdominal pain and vomiting. She was diagnosed as acute lymphoblastic leukemia (ALL) and started chemotherapy including steroids and L-asparginase six months before the presentation. She had hyperglycemia (Random Blood Sugar = 440), metabolic acidosis (PH: 7.05, HCO3: 5.4 mEq/L), and ketonuria (Acetone in urine: ++) so diagnosis of DKA was done. She was admitted in Pediatric Intensive Care Unit (PICU) for DKA treatment. Her HbA1c

was 9.2 % and C-peptide was 0.12ng/ml. The abdominal pain increased with persistent vomiting. Amylase and Lipase levels were high, the abdominal CT scan revealed acute pancreatitis. After management with Total parenteral nutrition (TPN), antibiotics with continuous insulin infusion for 2 weeks, the abdominal pain improved and vomiting stopped. Her treatment was then switched to basal/bolus multiple dose insulin injections (MDI) at a daily dose 1.2 unit/Kg/day. On follow up, her insulin requirements decreased gradually. Final diagnosis was acute pancreatitis with DKA following L-asparaginase therapy for ALL.

Conclusion

We conclude that the combination of acute pancreatitis and DKA associated with L-asparaginase use are rare complications with significant morbidity and mortality. During therapy with L-asparaginase, we recommend a close monitoring for hyperglycemia as well as acute pancreatitis to reduce the adverse events related to both conditions.

An Interesting Case Presentation

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Introduction

A Fourteen years old boy known case of T1DM for 5 years on mixtard insulin 1.6 units/kg/day with poor control, HbA1c > 13%, not known to have any other medical illnesses, he experienced frequent attacks of hypoglycemia associated with weight gain.

His growth parameters within normal range and has reached all development milestones. He presented with hepatomegaly otherwise his examination is unremarkable.

His investigations reveal normal CBC, RFT, TSH, FT4, ACTH, cortisol with positive screening test for celiac disease, ultrasound showed hepatomegaly.

During last admission, insulin was discontinued, despite that he developed severe hypoglycemia twice then he was kept on observation with no insulin treatment provided, his blood glucose readings is high. Critical sample for insulin was 74mlU/L, C-peptide was 0.014ng/ml.

Interesting Case of Pancreatic Agenesis with Neonatal Diabetes

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Abstract

Background: Pancreatic agenesis is an extremely rare condition resulting from impaired formation of the pancreas during embryonic development. Clinically, pancreatic agenesis is defined as insulin dependent neonatal diabetes diagnosed before 6 months of age and pancreatic exocrine insufficiency requiring enzyme replacement therapy, genetic defect in over 80% of patients with pancreatic agenesis identified.

Case report: A 27-day old male neonate, full term. Presented with frequent passage of bulky, offensive stool, polyuria and poor weight gain since birth, and later with generalized swelling of the body. On Examination: he was conscious, active with generalized edema, weight 2700 gm.

Investigations: Total serum protein: 33g/dl, Albumin:19g/dl, Random Blood Glucose: 18 mmol/l, 22mmol/l, Serum Cholesterol 122 mg/dl, Stool exam: fat droplets ++, Urine exam, sugar +++, ketones nil, Serum insulin: 0.04 µg/L with a normal range of 0.2–0.62 µg/L, C-peptide: 0.05 ng/mL (normal range: 0.8 to 4.2ng/mL and remaining laboratory tests were unremarkable. Abdominal ultrasound & CT scan revealed absence of pancreas.

Discussion: From the above clinical presentation, laboratory tests and medical imaging we excluded hepatic, renal and cardiac disease. The condition that collectively presented with hyperglycemia, glycosuria, offensive bulky stool, edema, hypoproteinemia, poor weight is related to pancreas pathology, confirmed by abdominal ultrasound and computerized scan that revealed absence of the pancreas supported by low serum insulin and c-peptide. Our plan for management was supportive, insulin and pancreatic enzymes replacement with good response.

Conclusion: To survive, patients with complete pancreatic agenesis require early identification and treatment of neonatal diabetes with insulin and pancreatic enzyme replacement therapy shortly after birth. Most patients with pancreatic agenesis are born with intrauterine growth restriction (IUGR), reflecting a requirement for fetal insulin to support in utero growth.

Resistant Diabetes in a 14 Years Old Controlled on Insulin Pump

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Abstract

Background: Intensive insulin therapy should lead to better diabetes control and reduce the risk of complications. However, diabetes control using multiple dose injections (MDI) during prepubertal and adolescent period can be challenging due to several factors. Continuous Subcutaneous Insulin Infusion (CSII) using insulin pump was introduced to a resistant diabetic adolescent.

Case report: A girl presented at 10 years old with diabetes

ketoacidosis. Her antibodies screen was positive. She was diagnosed with type 1 diabetes mellitus and started on insulin. Initially she was on MDI using NPH twice daily and regular insulin three times daily. A few months later she was changed to Glargine daily and lispro TID. Initially, lispro was prescribed as fixed doses with meals and later after training on carbohydrate counting. However, her blood sugar was not controlled. By 13 years of age, she reported using increasing dosage of insulin of almost ≥2units/kg/day! Nevertheless, her haemoglobin A1C reached 13.3%. She was not compliant and there were opposing behaviors and anger as well as changes in her daily routine pattern. An adolescent pediatrician helped her in anger management and organizing her lifestyle. At the age of 14 years, she was started on insulin pump with 4 basal levels ranging between 1.5-1.75 units per hour. The pump had a technical failure three weeks after starting leading to an episode of DKA. During school holidays, she had early evening hypoglycaemia episodes due to daytime sleeping and missing meals. Later, basal insulin was made into 5 levels and ICR and ISF adjusted. Her compliance was better and haemoglobin A1C improved significantly to 8%.

Conclusion: CSII use in adolescent led to lower insulin requirements, flexibility in lifestyle and hence better satisfaction and compliance with significant improvement in diabetes control.

Mauriac Syndrome Still Exists!

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Abstract

Mauriac syndrome (MS) is rare complication of type 1 diabetes. It is more common in children and adolescent with poor glycemic control. High suspicion (MS) in diabetic adolescents with hepatomegaly, transaminase elevation, dyslipidemia, growth or sexual delay and cushioned features.

Case report: we present an adolescent girl seventeen years old who presented with neonatal diabetes and had a poor glycemic control. She has dyslipidemia, growth failure, hepatomegaly and was diagnosed as Mauriac syndrome. Intensive diabetes control resolved her hepatomegaly and normalized her transaminase levels but unfortunately, she develop nephropathy (CKD stage 3 as complication of poor diabetic control.

Conclusion: Mauriac syndrome is rare complication but needs to be considered in patients with poor glycemic control, growth failure, dyslipidemia and glycogenic hepatomegaly. Multidisciplinary approach involving endocrine, pediatric, nutrition, psychology and psychiatric guidance is required to manage this syndrome.

Diabetes and Wilson Disease

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Abstract

Introduction

We report a 7 years old girl, from consanguineous parents. She was diagnosed with type 1 diabetes at age of 3 years, placed on insulin treatment. She has a family history of Diabetes and Wilson disease expressed in her siblings. She was screened for Wilson disease as well as her other siblings, and she tested positive at age of 4 years. Her treatment was a challenge to keep her blood sugar under control. She was non-compliant with her medication and her HbA1C has been over 10% for the last 2 years. Diagnosis of Wilson disease in her case added to the challenge considering its impact on the liver, brain and many other tissues.

Early Onset of Severe Diabetes in Prader Willi Syndrome- Pathophysiology, Clinical Features and Management Challenges

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Abstract

Background: Typical features of Prader-Willi syndrome (PWS), a neurogenetic disorder due to a lack of expression of paternal genes on 15q11-q13 include hypotonia, hypogonadism, impaired intellect, behavior disorder and hyperphagia. Impaired glucose tolerance and diabetes mellitus (DM) occur in 7-20% of patients with onset in late adolescence or adulthood. Recent studies have showed that PWS patients have a defect in pro-hormone to hormone processing causing the endocrine features of PWS. In this report, we describe a rare case of severe DM in a 9-year-old child with PWS.

Methods and Results: A 10 years old male with PWS treated with 850mg metformin daily since the past one year presented with Hyperglycemia of 300-350 mg/dl and HBA1C of 13.5%. Laboratory tests revealed elevated liver enzymes and hyperlipidemia; liver ultrasound showed steatohepatitis. Oral and intravenous Glucose Tolerance Test indicated residual insulin secretion. Anti-GAD antibodies were negative. The insufficient partial response to gradually increasing doses of Metformin, indicated the addition of increasing doses of basal and bolus insulin treatment. Statins treatment was initiated for Hyperlipidemia. The typically continuous weight gain despite the significant efforts to limit caloric intake as expected in PW patients complicated the metabolic control but the intensive insulin and statins therapy resulted in a decrease in HBA1C from 13 % to 9.4 % and improved liver function test and lipids profile.

Conclusion: This unique anti GAD negative diabetes presentation in a patient with PW syndrome already at 9 years of age exerted a therapeutic challenge. The severe hyperphagia complexed by cognitive limitations resulted in uncontrolled high carbohydrates consumption that could not be solved solely by oral hypoglycemic therapy. Adding a basal bolus regimen helped managing the diabetes. New insights in the pathophysiology of endocrine abnormalities in PWS can lead to new therapy options in these patients.

Guillain Barre Syndrome Associated with Diabetic Ketoacidosis

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Abstract

Background: Guillain Barre Syndrome (GBS) is an acute inflammatory polyradiculo neuropathy. Diabetic ketoacidosis (DKA) is a serious, life threatening complication of type 1 diabetes. In the pathogenesis of Guillain Barre Syndrome and DKA, autoimmunity plays a role.

Case report: A twenty-one months old female child, consulted a pediatric neurologist in which she diagnosed as a case of Guillain Barre Syndrome after examination and investigation, start immune globulin treatment. After one day of treatment, patient condition deteriorated with increase depth and rate of breathing and deterioration of the conscious level, after reevaluation the patient was diagnosed with DKA and start treatment. After stabilization, the patient still had weakness with autonomic manifestation so, the advice was to complete treatment with immunoglobulin with diabetic management, patient then stabilize and discharge on two daily insulin doses.

Neonatal Diabetes Due to Pancreatic Transcription Factor 1A (PTF1A) Gene Mutation

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Abstract

Background: Neonatal diabetes is a rare form of monogenic diabetes with onset in the first six months of life occurring in 1/100,000 to 1/400,000 births. Both permanent and transient forms have been described. Permanent neonatal diabetes results predominantly from mutations in the KCNJ11 and ABCC8 genes. Less frequently, mutations of the PTF1A gene, cause a form of permanent neonatal diabetes resulting from pancreatic hypoplasia or agenesis.

Case presentation: We present a 2-year-old female who presented at the age of 3 weeks with poor feeding and failure to gain weight. She was diagnosed with neonatal diabetes and was also found to have an exocrine insufficiency. The patient was found to have a missense mutation of the PTF1A gene, which was previously reported in 2 other families. The patient was treated with insulin Aspart using an insulin pump and creon.

Conclusion: The association of exocrine insufficiency with neonatal diabetes should raise the suspicion of PTF1A gene mutation and the use of insulin pump in the treatment of neonatal diabetes is effective.

Prader -Willi Syndrome

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Abstract

Introduction

Prader-Willi Syndrome (PWS) is a complex genetic disorder severe disability in children and adults. It is associated with an early onset of severe obesity and short stature. Which contrasts with the obesity and must cause an etiological assessment, discrete dysmorphic signs and learning and behavioral disorders with severe psychiatric disorders? Almost constant weight is likely attributed to the growth hormone deficiency, in the hypothalamic syndrome, it remains to be explained by pathophysiological mechanisms. In Genetics, PWS is a model of parental genomic imprinting involving micro RNA nucleotides.

A Case of Severe Insulin Resistance

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Abstract

Rabson mandenhall syndrome (RMS) was first described by Rabson and Mendenhall in 1956 in three siblings presenting with dental and skin abnormalities, abdominal distension, coarse faces, early dentition, hirsutism, phallic enlargement, pineal hyperplasia, and ovarian tumor. Later in 1975, West et al. described siblings with similar clinical features. All these patients had generalized skin hyperpigmentation, coarse faces (prominent orbital ridge, macroglossia, thickened lips, a depressed nasal bridge) and a dry skin with a creased, dark and velvety appearance especially on

nape of neck, axilla, groin and sacral region. The primary defect in RMS is in the insulin receptors. The gene map locus is 19p13.2. It is an autosomal recessive condition with abnormal alleles for insulin receptors.

Case Report

10 years old girl, presented with severe darkening of her skin started age of 4 years and continued to progress, in the neck, axilla, genitalia and extensor services of arms, associated with skin dryness and abnormal fuzzy hair. Parents are consanguineous. family history of type 2 DM in grandparents in old age. Her sibling at 4 years old, presented with early darkening of skin. history of aunt death at age of 4 years with similar phenotype, cause unknown. She had severe acanthosis nigricans, course face, lack of subcutaneous fat, wasted muscles, abnormal teeth, dry skin, hirsutism, breast tanner 3, and clitoromegaly 2.5cm.

Investigations showed insulin level total >600, C-peptide 4416, Random BS 6mmol/l, Fasting BS 3.7 mmol/l, HbA1C 6.9, OGTT done fasting BS 8mmol/l and 2 hours post 75gm was 28.3mmol/l. Molecular genetic testing for our patient, confirmed homozygous variant CYS293Arg in the INSR gene. Whole exome sequence for her sister and parents confirmed same abnormality. She was admitted to control her blood sugar. Diet was kept at 1800 kcal divided into small meals with carbohydrate intake of 40% of her requirement. She was started on dapagliflozin which resulted in a good diabetes control. This is the first case in the literature to use dapagliflozin in RMS.

Sanjad-Sakati Syndrome and its Association With Type 1 DM

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Case Study

A young boy aged 2 years 8 months old, known case of Sanjad Sakati syndrome, confirmed positive TBCE gene on one alpha presented to pediatric emergency with history of polyuria and polydipsia for 1 week, with no history of vomiting or abdominal pain.He was a full-term baby, born at 2kg. Parents are first degree relatives and his 9 year old brother was diagnosed with T1DM at age of 4 years. Positive family history with thyroid disease and vitiligo.

Conclusion

After a review of previous case reports, this is the first case that showed that there could be a relation between SSS and type 1 DM.

Five Years Follow Up of A Child With Thiamine Responsive Megaloblastic Anemia Syndrome

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Backgrounds & Aim

Thiamine Responsive Megaloblastic Anaemia syndrome (TRMA) is a rare form of monogenic diabetes. We report a case with TRMA with long term follow-up data for more than 5 yrs.

Case Report

13 months old child, referred with chronic normocytic anemia started at 4 weeks old and required 9 blood transfusions. Her WBC were normal but platelets were low. Three bone marrow aspirations/biopsies were inconclusive. She developed diabetes at 6 weeks old and has been on insulin since with HbA1c between 10.5 -11.2%. She was developmentally appropriate for her age and the family had no concern about her hearing abilities. The combination of anemia and neonatal diabetes raised the possibility of TRMA however her anemia was not megaloblastic. Sequencing of SLC19A2 gene identified a homozygous mutation (S143F) which was inherited from both parents confirming the diagnosis of TRMA. She was started on oral thiamine which avoided further blood transfusion, reduced her insulin dose and improved the diabetes control. Formal hearing test revealed sensorineural deafness. For the next 5 years, she needed no further blood transfusion but her initial excellent diabetes response to thiamine could not be maintained with reduced C-peptide and raised HbA1c.

Conclusion

The case illustrates the clinical benefits of genetic tests particularly in rare condition with atypical presentation. It also raises the question of whether the initial response to thiamine in TRMA can be maintained.

Thiamine-Responsive Megaloblastic Anemia, Non-Autoimmune Diabetes Mellitus: Rogers' Syndrome

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Background

Thiamine-responsive megaloblastic anemia (TRMA) is rare childhood disorder. The disease follows an autosomal recessive pattern of inheritance. The typical clinical triad of thiamine-responsive anemia, diabetes mellitus and sensorimotor deafness

are often found in Rogers' syndrome.

Case Report

18 months old patient came to endocrine clinic with history of hyperglycemia. Patient admitted to local hospital at age of 3 months with severe macrocytic anemia with hemoglobin of 3 g/dl required blood transfusion. The patient also presented with hyperglycemia, and treated with bolus doses of rapid acting insulin. Bone marrow biopsy done by hematologist, showed megaloblastic changes and ringed sideroblasts and stared on thiamine by primary physician and the child was discharged on bolus doses of aspart, if blood sugar was more the 200mg/dl. The family's lack of information on the diagnosis lead to noncompliance of the thiamine therapy. The hemoglobin was 8g/dl and hemoglobin A1c was high (7.2%). The gene study for Rogers' syndrome done showed pathogenic variant. 514G>C (p.Gly172Arg) was detected in a homozygous stat in the SLC19A2. The family was counseled about the disease and other associations was screened for our patient. Our patient started on 100mg of thiamine and came after 3 months in follow-up visit with hemoglobin of 12g/dl and A1c was 5.4%

Conclusion

For any child presenting with diabetes mellitus before age of 6 months we should think of monogenic cause of diabetes.

A 9-Year-Old Boy With MODY 2, Case Presentation

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Case Report

we report a 9-year-old boy previously healthy, presented with three years history of intermittent polyuria and polydipsia after short term therapy with intravenous steroid. The serum glucose value was high but not exceeding 200mg/dL and not associated with metabolic decompensation and did not required insulin therapy. He has a positive family history of T2DM, gestational diabetes and similar complaints in the two younger siblings.

Clinically, he was well hydrated, not obese and has no signs of insulin resistance. The laboratory tests showed mild fasting hyperglycemia, normal HbA1C, normal oral glucose tolerance test and negative diabetes autoimmune markers. Continuous glucose monitoring system inserted for 5 days and revealed average of 33% blood glucose reading above 140mg/dl and highest glucose value was 186mg/dL. Genetic analysis of Maturity onset diabetes of the young (MODY) was done and showed GCK mutation (MODY2).

Diabetes Ketoacidosis Secondary to Oncology Treatment

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Abstract

Hyperglycaemia is a known complication of steroid therapy for oncology treatment but Diabetic Ketoacidosis (DKA) is uncommon. We report a 13 year old boy who presented with DKA on dexamethasone while treated for T cell lymphoma. He required insulin infusion of 0.08 unit/ kg/ day but weaned of insulin easily until he was off insulin completely. Subsequently, he suffered repeated hypoglycaemia and was confirmed to have secondary adrenal insufficiency.

Wolfram Syndrome Type 2: A Case Report

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Abstract

Background Wolfram Syndrome type 2 (WS2) is considered a phenotypic and genotypic variant of WS DIDMOAD syndrome), whose main diagnostic criteria are DM and optic atrophy. The causative gene is CISD2. Clinically, WS2 differs fromWS1 for the absence of diabetes insipidus, and for the presence of defective platelet aggregation resulting in peptic ulcer bleeding. Since 2015, a considerable number of Palestinian patients with WS2 were recognized.

Case presentation

The proband is an 11-year-old boy. At age of 9 yrs who presented with polydipsia and polyuria, HbA1c was 12 % and was with diagnosed with DM type I. He repeatedly suffered from hypoglycemic episodes and required low doses of insulin. OGTT test showed residual insulin response. GAD antibody was negative. The noticeable sign was his hearing aids. He used them since age of 7 yrs. As well, he was treated for GI ulcer with bleeding at age of 2 yr. Accordingly, diagnosis of WS2 considered, although no evidence of optic neuropathy. Genetic testing showed a mutated CISD2, confirming the diagnosis. Currently, trials of combined therapy with Incretin (GLP-1), and iron chelator &/or Acetylcystein are being processed, aiming to achieve an optimal glycemic control.

Conclusion

WS2 seems to be more prevalent among the Middle East population. Diabetes in children is not always type1. One should

consider WS2 in anti-GAD negative patients with juvenile-onset DM who experienced GI Bleeding. At the present time, our patient does not show optic atrophy, one of the main diagnostic criteria for WS. WS related complications probably remain asymptomatic for a long time indicating the necessity of long-term follow-up. Finally, there is currently no cure available for this disease.

Wolfram Syndrome Case Report

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Abstract

Background: Wolfram syndrome is a rare autosomal recessive disorder, characterized by multiple neurodegenerative manifestations also known by the mnemonic DIDMOAD (diabetes insipidus, diabetes mellitus, optic atrophy and deafness). Although there is currently no effective treatment that can delay or reverse the progression of Wolfram syndrome, the use of careful clinical follow-up and supportive care can help to relieve the suffering of patient and improve their quality of life. A mutation of the WS1 gene (Wolframin) is found in about 90% of cases, and the syndrome is characterized by dysfunction of the endoplasmic reticulum.

Case presentation: A 20-year old male patient from consanguineous parents with a diabetic brother. He is known as insulin Dependent Diabetes Mellitus from the age of 8 years, a bilateral optic atrophy was discovered after diabetes. A Wolfram syndrome was suspected. The clinical picture further evolved with loss of the color vision, a diabetes insipidus, a urinary tract anomaly (ureterohydronephroses with neurological bladder complicated by chronic kidney failure) and neurospychiatric disorders (depression) combined with delayed sexual maturity. His younger brother also is very likely to have Wolfram syndrome (diabetes mellitus associated with optic atrophy).

Conclusion: Wolfram syndrome is a rare and severe condition that it is necessary to think of in front of the association of diabetes mellitus with others of the features of this syndrome: diabetes insipidus, optic atrophy or deafness. Consanguinity in families of affected patients is common. In our case the clinical picture is almost complete and the prognosis is reserved as result of chronic kidney failure making the management difficult.

Neonatal Diabetes with Seckel Syndrome

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Abstract

We report a 2 yr old girl who was born small for gestational age and had dysmorphic features. She had absent corpus collosum and dilated ventricles on brain MRI. On day 28 of life, she developed non-ketotic hyperglycemia and was started on insulin infusion then shifted to regular insulin 0.25 units every 6 hours subcutaneously. Genetic specialist diagnosed her to have Sickel syndrome. She remained on insulin treatment and her genetic testing is awaited. Genetic analysis is an important diagnostic tool in confirming the cause of diabetes in children presenting before 6 months of age.

Day to Day Variation in Insulin Requirements in A Child With Chronic Kidney Disease

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Background

Insulin resistance (IR) is common in patients with end stage renal disease, and is linked to protein energy wasting and malnutrition. Subcutaneously administered insulin is excreted through the kidney, unlike endogenous insulin, which undergoes first-pass metabolism in the liver. As renal function declines, insulin clearance decreases and the insulin dosage must be reduced to prevent hypoglycemia. Also, peritoneal dialysis exposes patients to a high glucose load via the peritoneum, which can worsen insulin resistance.

Case report

Two years and 7 months old male child who is a known case of end stage renal disease due to bilateral autosomal recessive polycystic kidneys diagnosed at age of 6 months and started peritoneal dialysis till now. He was diagnosed as diabetes mellitus at age of 2 years and 3 months old and he started insulin therapy. His insulin requirements varied in relation of dialysis days where his requirement is 0.5 unit / kg /day in days off dialysis and 1.2 unit/kg/day in days of dialysis.

Conclusion

We concluded that we have to monitor and adjust the doses of insulin according to dialysis days.

A Case of Diabetic Ketoacidosis with Severe Hypophosphatemia Complicated with Rhabdomyolysis and Acute Renal Failure

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Background

Acute Renal Failure (ARF) is a classical complication of diabetic ketoacidosis (DKA) and there are a lot of causes that contribute to its development.

Case report

A case of a 12-year-old female, was admitted to the hospital with severe DKA as the 1st manifestation of her diabetes mellitus. She presented with severe unresolved metabolic acidosis, hypertensive and oliguric ARF with very high plasma creatinine. In addition, severe hypophosphatemia and rhabdomyolysis were noted during DKA which probably contributed to the ARF. The level of serum phosphorus was observed to be as low as 0.6mg/dl on the 16th hour of ketoacidosis treatment. The patient developed acute tubular necrosis due to rhabdomyolysis, but there was no blood reaction in the urine and the creatine kinase increased to 1200 U/L. She was managed conservatively with individualized fluid plan and phosphate supplementation. The patient was treated without dialysis and was cured after a polyuria period of 3 weeks after the oliguric period.

Conclusion

Hypophosphatemia is one of the main causes of acute renal failure in diabetic ketoacidosis. Early detection of hypophosphatemia can improve potentially poor outcome of patients with ARF associated with DKA

A Case of Type 1 Diabetes Mellitus with Autoimmune Hepatitis Complicated With Hepatic Cirrhosis

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Background

The association between diabetes and liver disease has relevance to diabetologists, hepatologists, and primary care physicians. An excess prevalence of chronic liver disease in diabetic patients has stimulated interest in this association and on exploration of its causes.

Case Report

A 14-y-old girl was referred to us for the management of insulin dependent diabetes mellitus. There was no history of drug intake. By examination, she was jaundiced and there was splenomegaly. Investigations showed markedly raised transaminases and hyperbilirubinemia. Ultrasound showed normal sized cirrhotic liver, early dilated portal vein and moderate splenomegaly. All investigations for diagnosis of causes of liver dysfunction were done. Autoantibody titres (including antinuclear antibody, smooth muscle antibody) were positive. Total Ig G was high. Percutaneous liver biopsy showed loss of normal lobular architecture, nodules of hepatocytes surrounded by fibrous tissue and inflammatory infiltrate in the fibrous septa. Corticosteroid therapy was begun to treat the disease with increase of the dose of insulin from 1.5u/kg to 2.2u/kg. Screening for other autoimmune diseases (including thyroid disease, celiac disease, adrenal insufficiency, hypoparathyroidism) was done.

Conclusion

This case exhibited very rare combination of two different autoimmune disease including type 1 diabetes mellitus and autoimmune hepatitis (AIH). AIH is a chronic inflammatory disorder characterized by elevated immunoglobulins, autoantibodies, and a dramatic response to immunosuppression. A plethora of clinical presentations can be seen ranging from chronic indolent disease to cirrhosis and diagnosis requires exclusion of other causes of liver disease. Corticosteroid therapy must be instituted early.

DKA Associated with Stroke in T1DM Patient

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Abstract

Type 1 diabetes mellitus (T1DM) is a common autoimmune condition that often presents in childhood and may be complicated by episodes of diabetic ketoacidosis (DKA). DKA is a complication that mostly occurs in association with type I DM, and it may be encountered in up to 25% -40 % of kids with newly diagnosed type I DM. Common precipitating factors are infection, drugs, stress of chronic disease, and psychological trauma. It is characterized by the presence of ketoacids due to insulin insufficiency and it is associated with hyperglycemia, disturbances of fat, protein and carbohydrate metabolism. We have to remember that children can die from diabetic ketoacidosis. The most serious complication of DKA is cerebral edema which occurs in 3-10 pediatric patients per 1000 cases of DKA, so prevention of cerebral edema leading to high risk of ischemic or hemorrhagic stroke in children is very important. Our patient with type I DM and celiac disease, presented with a picture of DKA. The patient was started on treatment according to DKA protocol and new guidelines, mainly in the degree of dehydration that is used to calculate fluids and option for using intravenous insulin rate 0.05units /kg -0.1units /kg per hour. The patient developed complications with cerebral edema and hemorrhagic stroke.

Depression in Children with Diabetes Type 1: Case Report

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Introduction

Depression in children and adolescents with type 1 diabetes has been associated with negative diabetes related health outcomes such as poorer glycemic control.

Case Report

A 9 years old has been diagnosed with diabetes since one year of age. She is under treatment on basal bolus and the daily insulin dose was 1U/Kg/day. Her treatment course was associated with hyperglycemia and a several episodes of asymptomatic hypoglycemia. Her hypoglycemia persisted despite reduction of insulin dose. On involvement of multidisciplinary team looking into her condition, it was concluded that she suffered from depression and has induced hypoglycemia.

Conclusion

Multidisciplinary pediatric diabetes team is of crucial importance to identify underlying issues related to poor diabetes control and guide family-based interventions.

Recurrent Diabetic Ketoacidosis

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Abstract

A 27 days old baby presented with rapid breathing for 2-3 days and associated with poor feeding. He also vomited twice. The vomit was non-billious, containing no blood with no abdominal distension and had normal bowel motions. The baby was very irritable during that 2-3 days but has no fever. Clinical exam revealed a sick, restless and dehydrated baby. The diagnosis of sepsis was established and treatment commenced as such. The baby did not improve and continued to be acidotic. Blood glucose checked and found to be 700mg/dl and diagnosis of diabetes ketoacidosis was confirmed. This was the third presentation of the baby when he presents with features mimicking sepsis and gets empirical treatment with antibiotic while diabetes remains undiagnosed. Diagnosis of diabetes ketoacidosis can be missed in sick neonates as features can be closely of those seen in sepsis. Blood glucose checking in sick babies is a useful and simple test to help confirming the diagnosis.

An Interesting Case of Mody

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Abstract

We report a 13 yr old girl who was diagnosed with diabetes at the age of 10. She was on insulin basal bolus regime of insulin but was not compliant with her treatment. Her insulin requirement was low and she never had DKA even when treatment was missed. Parents were first degree cousins and there is a strong family history of diabetes. The low insulin requirement despite the pubertal stage alerted us to consider other types of diabetes other than type 1. Investigations showed negative auto antibodies and her genetic testing for MODY confirmed diagnosis of MODY 2 (GCK gene mutation). Monogenic diabetes should be diagnosed in adolescents with low insulin requirement particularly if there is a strong family history of diabetes.