Wound Care in Diabetes

Chair: ***Carlisle Goddard***

Diabetic Foot Ulcers: Prevention, Risks and Treatment
Michael Salinero

In this presentation, the risk factors for the development of diabetic foot ulcers, the goals and factors for the prevention of ulcers in patients who are at risk, and procedures, products, and care of the diabetic foot ulcer, will be discussed.

CARES SYMPOSIUM
SEARCHing for Type 2 Diabetes in Youth TODAY
Philip Zeitler

Over the last two decades, Type 2 diabetes (T2D) has become a clinical entity of increasing importance among adolescents. Yet, research specific to adolescent T2D is in its infancy. Our understanding of the epidemiology of T2D among adolescents has been substantially advanced by the SEARCH study, but remains complicated by variability in definition, incomplete knowledge of novel autoimmune epitopes, the presence of individuals with phenotypic overlap between Type 1 and Type 2 diabetes and inadequate understanding of the contribution of common single-gene defects. Furthermore, a higher ratio of diagnosed to undiagnosed cases and a strong relationship with the onset of puberty suggest unique aspects of the pathophysiology in adolescents. At the same time, there is increasing evidence that T2D in adolescents occurs in a unique and challenging psychosocial setting that must be understood to guide effective treatment interventions.

Despite the likelihood that early-onset T2D will have important implications for future public health, systematic data on optimal methods to treat T2D in adolescents have been lacking. However, the TODAY study, a prospective, randomized, multi-centre trial to evaluate treatment regimens and the clinical course of T2D in youth, has now provided critical information regarding treatment response to interventions, along with insight into areas such as beta cell function and insulin resistance, body composition, aerobic fitness, cardiovascular risk factors and microvascular complications.

Managing Type 1 Diabetes in the Adolescent
Virendra Singh

Adolescence is a complex period in a young person's life: it encompasses a series of biological and psychosocial changes commencing with near total dependence and ending with relative independence.

Medical management has to take into account all these changing and challenging aspects of the individual and their family. Type 1 diabetes with its (injection requiring) insulin therapy by itself evokes an emotive response, each meal ingested being a constant reminder of "being different". Medical management of the biological changes should be relatively easy, but when modulated by the varying complexities imposed by the psychosocial needs, create a very unique spectrum from the exciting to frustrating to challenging. With all these factors in the mix, Type 1 diabetes for some affected individuals becomes a true disease.

At the very end of this process of care, appropriate handover to an adult service is an important aspect of securing trusting care of the young adult.

The Obese Child – What Should I Do?
Philip Zeitler

Obese youth are an increasingly common challenge for general paediatricians and specialists. The American Academy of Paediatrics Expert Committee on obesity has outlined a tiered approach to the obese child from the initial evaluation and basic intervention through referral to tertiary and quaternary obesity centres. In this session, we will review the risk factors and determinants of obesity in the paediatric population, including secular changes in dietary intake and routine physical activity. We will also discuss recommendations for targeted medical and endocrine evaluation of obese youth in the primary care office/clinic designed to identify the rare patient with underlying disorder, as well as to clarify obesity-related co-morbidities that may be present. Finally, we will identify evidence-based interventions that can be instituted in the busy paediatric office and discuss the effectiveness of a multi-disciplinary approach to evaluation and management of the obese children and adolescents.

Hyperthyroidism in Children: Do We Treat Them Like Adults?
Vanessa Davis

Hyperthyroidism is an uncommon endocrine problem in childhood, most of which is caused by Graves disease. Females are more commonly affected than males (3-5:1) with a peak incidence at 12−15 years. The treatment in paediatrics is still controversial. Antithyroid drugs are typically the first line of treatment. Both methimazole and propylthiouracil (PTU) have been associated with side effects including agranulocytosis, rash, urticaria and hepatitis. Additionally, PTU have been more commonly associated with hepatitis (up to 25% of patients). Hepatic failure leading to liver transplant occurs in less than one per cent of cases, thus its use has been cautioned in children. Methimazole has been recommended but only about one-third of patients will have complete resolution of their symptoms after two years. The number of successfully treated patients increases with each additional year of use. Factors associated with higher sustained response have not been clearly elucidated. Thyroid surgery halts the disease and is safe in expert hands but can have serious complications. These include anaesthetic risk, hypoparathyroidism, recurrent laryngeal nerve damage, haemorrhage and keloid formation. Radioactive iodine ablation (RAI) has replaced both medical and surgical treatment in adults. Though RAI has been proven to be an effective and safe therapy in children, there are still concerns among some paediatric endocrinologists about its long term safety in children.

Menstrual Irregularity in Adolescence – Is This PCOS?
Stephanie Clato-Day Scarlett

The World Health Organization defines adolescence as the period in human growth and development that occurs after childhood and before adulthood; from ages 10 to 19 years. Puberty is the most striking physical change that occurs during this period. Hormonal and physiological processes work in tandem to achieve the transition to adulthood and full sexual maturity.

Menstrual irregularity during puberty is common and in many cases represents an immaturity of the hypothalamic-pituitary-ovarian axis which results in anovulation. In other cases, the axis may be impacted by disordered eating, excessive and strenuous exercise, stress, endocrine disorders, exogenous hormones and infection.

Polycystic ovarian syndrome (PCOS) is the most common cause of chronic anovulation occurring in 3–7% of women of reproductive age. It is characterized by oligomenorrhoea, androgen excess and insulin resistance.

Diagnosis of PCOS is challenging as features often overlap with those of normal puberty. Assessment of menstrual irregularity requires careful history and biochemical evaluation to demonstrate key diagnostic criteria and exclude the disorders that mimic PCOS.

Management is multidisciplinary. These patients not only require treatment of individual symptoms but benefit from nutritional optimization and psychological intervention for mood disorders and issues pertaining to self-esteem and body image.

Early identification and counselling is key to preventing the long-term metabolic sequelae associated with the metabolic syndrome: dyslipidaemia, hypertension, Type 2 diabetes and cardiovascular disease.

Case 1: Gynaecomastia
Rebecca Thomas

Gynaecomastia is a benign proliferation of the glandular tissue of the male breast, and is generally thought to represent an imbalance between the stimulatory effect of oestrogen and the inhibitory effect of androgen. It is most common in infancy, adolescence and in middle-aged to elderly men. Gynaecomastia may be physiological (and transient) or non-physiological, and may signify a more sinister underlying disease. Management of gynaecomastia depends upon its aetiology, duration, severity and presence or absence of tenderness. Treatment may range from observation only, to drugs such as androgens, aromatase inhibitors and oestrogen modulators, and less commonly to surgery.

Case 2: Delayed Puberty
Jason Mungalsingh

Puberty is the phase during which physiological changes occur which allow reproduction to take place. Delayed puberty is the absence or incomplete development of secondary sexual characteristics at an age during which 95% of children have initiated this process. The causes of delayed puberty include hypogonadotropic hypogonadism, hypergonadotropic hypogonadism and eugonadotropic hypogonadism. The patient's growth parameters and previous trends should be documented. Basic investigations include adequate historical and clinical evaluation, and measurement of luteinizing hormone, follicle stimulating hormone, and other sex hormones. Karyotyping and other investigations should be considered. Treatment of delayed puberty includes supplementation with testosterone in boys and ethinyl oestradiol in girls. The underlying cause should be addressed whenever possible. Affected children may have significant psychological stress, especially boys.