

## News Items and Issues: ISPAD 2013 Conference Highlights

# Annual Conference 2013 Highlights

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The 2013 ISPAD meeting took place in October in the historic city of Gothenburg, Sweden. Gun Forsander and Ragnar Hanås had organized a well-run congress and fascinatingly diverse programs.

With almost 1500 participants representing a wide variety of disciplines, a new record for attendance was set.

Edwin Gale gave a superb opening lecture with an overview of the historical management of type 1 diabetes (T1DM). His belief that the greatest progress in the care of T1DM over the years has been made by the additive benefit of all the minor improvements, rather than by any major breakthrough, inspired the audience with the knowledge that small gradual achievements are all worthwhile. Gale stressed that in spite of many worthwhile international initiatives, such as 'Life for a Child', it remains an unfortunate fact that the major cause of death for a child with diabetes is lack of insulin.

### Prevention of T1DM

Michael Knip gave a comprehensive talk regarding the impact of different dietary factors, such as intake of foreign proteins, fats, and vitamins, on the pathogenesis of T1DM and the potential of dietary interventions in disease prevention. Terence Wilkin presented his view regarding insulin resistance as the primary driver of T1DM, challenging the

current susceptibility-trigger-autoimmunity-model by providing new insight into how insulin resistance might lead to not only T2DM but also T1DM.

### New aspects of diabetic ketoacidosis

Julie Edge reviewed the current evidence for the management of diabetic ketoacidosis (DKA), with younger age, severity of acidosis, higher urea levels, and lower pCO<sub>2</sub> value as key risk factors for childhood onset new diagnosis; administration of HCO<sub>3</sub>, large volumes of fluid over the first 3–4 h, and insulin in the first hour are critical. Both Edge and Joseph Wolfsdorf discussed the use of lower dose insulin therapy to reduce the risk of developing cerebral edema, and current evidence favors 0.05 U/kg/h.

Robert Tasker went straight to the heart of the debate regarding whether cerebral edema in ketoacidosis is vasogenic or cytotoxic in origin and concluded that cerebral edema in DKA is consistent with vasogenic rather than cytotoxic edema.

### Lipoatrophy. A come back?

Dr Forsander reported the results from the recent ISPAD survey of lipoatrophy and potential therapeutic options such as topical cromolyn, a change from Teflon to a stainless steel needle, or a change in insulin.

### **Bolus dosing: should it depend on carbohydrates alone?**

Despite access to modern technology, many young patients with T1DM fail to achieve good glycemic control. One of the fundamental issues when calculating insulin is to estimate how much insulin the healthy beta-cells would have provided in a certain situation (i.e., at a meal). In a pro-et-con debate Heidi Quinn argued that the currently widely used carbohydrate counting is tricky enough to keep the patient busy and that there is no need to complicate the equation further. Ewa Pankowska, however, defended the importance of including other macronutrients (fat and protein) when calculating a bolus dose. Long-term data will be needed to solve this issue.

### **What is new concerning insulins and drug action?**

Andreas Pflutzner gave an informative overview on new developments in improving glycemic control – newer insulins, drugs currently under development, and the importance of achieving faster acting insulins and how this might be achieved.

### **The current importance of non-insulin agents**

Brian Kennon reviewed non-insulin agents that have potential to improve glycemic control, e.g., incretins as intestinal triggers for insulin secretion (GLP-1 and GIP). Potential effect of these agents to increase B-cell mass in the honeymoon period has been suggested, although some concern has been raised by a potential increase in cancer risk.

### **The Scylla and Charybdis of brain dysfunction: the balance between hypoglycemia and hyperglycemia**

Rory McCrimmon considered the effects of hypoglycemia and hyperglycemia on cognitive function, concluding that avoiding the swings in glycemic control may reduce the risk of cognitive impairment. Tamara Hershey and Christopher Ryan explored the effects of severe hypoglycemia and hyperglycemia on neurocognition.

### **C-peptide: diagnosis and therapy**

Rachel Besser was awarded the ISPAD prize for young investigators for her work on urine C-peptide measurement from diagnosis onward. The beneficial effect of C-peptide on microvascular complications was presented by John Wahren. T1DM may now be recognized as a dual-hormone disorder.

### **National registries**

The session on registries highlighted the benefit for individuals and teams of being in a national register, associated with improved control. Kenneth Robertson showed the importance of setting targets and agreed team goals to achieve these aims.

### **Is T2DM twice as lethal?**

Ram Weis showed that patients who acquired T2DM between 15 and 30 years of age faced worse morbidity and mortality than those in the same age range who acquired T1DM. Philip Zeitler addressed the pharmacological treatment of T2DM in teenagers and underscored that these teenagers need more intense treatment than older patients with the same disease, although there are a very limited range of drugs approved for this age group.

### **Reproductive health in teenage girls and young women with T1DM**

Although pregnancy outcome has improved in mothers with diabetes, Martina Persson showed that a remaining, and increasing, problem is the high rate of LGA (large-for-gestational age) in children of mothers with diabetes. According to Graham Leese, prepregnancy counseling is essential, and should ideally start in puberty. Good access to and knowledge of suitable contraception is a prerequisite to planned pregnancies as discussed by Ethel Codner.

### **Neonatal diabetes**

Pål Njølstad provided an update on genetic neonatal DM, which affects about 0.15% of all childhood DM.

### **Progress in emerging countries**

Very impressive work and results were presented from Sudan, China, and India with respect to establishing multidisciplinary staffed clinics and reducing morbidity and mortality while stressing the need for further support from the International Diabetes Society. Graham Ogle presented fascinating data from 43 countries enrolled in the 'Life for a Child' programme supported by ISPAD.

### **The closed loop is on its way!**

The last day ended on a very optimistic note as the last part of the program focused on the progress of completing the closed loop as reported by Moshe Phillip from the Dream consortium, as well as moving The Artificial Pancreas in Cambridge to the at-home setting.

*So what were the highlights of this meeting?* Opinions will vary depending on the individual's perspective. From the editors' perspective the areas that generated most discussion included the debate concerning the potential change in the DKA guidelines and the disagreement about the best method of carbohydrate counting. The fact that the closed loop is on its way should not be neglected, and last but not least the

impressive work being performed in emerging countries is of particular interest.

Interacting with colleagues from other parts of the world remains an integral part of the ISPAD meeting. *It is hoped that most of the participants in 2013 will join the 40th ISPAD Annual Conference in Toronto, taking place on 3–6 September 2014.*

The full report is available on [www.ISPAD.org](http://www.ISPAD.org).