

CONFERENCE SCENE

Conference report on the 4th Annual International Conference on Advanced Technologies & Treatments for Diabetes

Nathan R Hill^{1,2} & Nick Oliver³

4th Annual International Conference on Advanced Technologies & Treatments for Diabetes, London, UK, 16–19 February 2011

The 4th annual meeting of Advanced Technologies & Treatments for Diabetes (ATTD) was held in London, UK, and focused on technological and scientific advances in the field of diabetes. Topics relating to the development of a closed-loop artificial pancreas featured prominently throughout the conference, although the broader aim of the conference was to facilitate discussion and discourse on the latest advances in technologies and therapies for people with diabetes. Approximately 1500 delegates from around the world attended, up a third on the year before.

The Advanced Technologies & Treatments for Diabetes (ATTD) meeting is a relatively new conference with the 1st annual meeting being held in Prague, Czech Republic in 2008. This year nearly 1500 participants attended from around the world, up a third from the year before. The conference was jointly chaired by Professor Moshe Phillip (The Jesse Z. and Sara Lea Shafer Institute for Endocrinology and Diabetes, Israel) and Professor Tadej Battelino (University Children's Hospital, Slovenia), and focused on technological and scientific advances in the field of diabetes.

The event opened with a welcome address from Battelino and the scientific program commenced with a talk by Phillip reporting on the consensus meeting held to determine the future use of continuous glucose monitoring in the pediatric age group. He was followed by a guest

speaker Professor Edwin Gale (Diabetes and Metabolism, University of Bristol, UK) who spoke entertainingly about the use and abuses of insulin in Type 2 diabetes. A welcome reception followed with an opportunity for networking and browsing the industry sponsor's stands.

The conference resumed the following day with the main oral topics covering a number of aspects of diabetes advances, from the development of an artificial pancreas to methods for the assessment of glycemic variability, long-acting insulin analogs, new advances in glucose monitoring (both invasive and noninvasive), insulin pump developments, translation research and novel treatments for diabetes. There were 238 posters on display throughout the duration of the conference and four rapid-fire oral presentation sessions that covered a wider range of topics.



News & Views

News

Journal Watch

Interview

Conference Scene

¹Oxford Centre for Diabetes, Endocrinology & Metabolism, Churchill Hospital, Oxford, OX3 7LJ, UK

²NIHR Oxford Biomedical Research Centre, Oxford, UK

³Faculty of Medicine, Imperial College, London, SW7 2AZ, UK

[†]Author for correspondence: Tel: +44 186 585 7325; nathan.hill@ocdem.ox.ac.uk

Highlights of the meeting included the session titled ‘Glucose variability – does it matter?’ drawing a large crowd with standing room only. Professor Irl Hirsh (University of Washington Medical Center, USA) opened the session and provided an interesting introduction on the importance of glucose variability. He explained how the landmark Diabetes Control and Complications Trial (DCCT) initially reported that for the same level of glycemic control, the risk of microvascular complications was reduced in the intensively managed cohort and this finding suggested a role for glycemic variability. However, on later reanalysis of this data by the DCCT it was determined that this correlation between glycemic control and microvascular risk was related to changes in HbA1c alone. This reanalysis potentially discounted any role for glucose excursions in the pathogenesis of diabetes-related complications. The important point he made was that, in this analysis, HbA1c only accounted for 11% of the risk of complications within the DCCT and the remaining 89% of risk of microvascular complications remains unexplained. Whilst genetics and environmental factors may account for a large part of that 89%, glycemic variability still remains a potential cause of microvascular damage and the controversy remains. Following Hirsch, Professor Stephanie Amiel (King’s College London, UK) discussed hypoglycemia unawareness and the effects that hypoglycemia has on inflammation. The session concluded with Professor Eric Renard (Department of Endocrinology, Diabetes, and Metabolism, Montpellier University, France) demonstrating that closed-loop insulin delivery has the potential to reduce glucose variability and reduce the frequency and severity of hypoglycemia. Throughout the meeting closed-loop insulin delivery was a strong theme. The aim to connect glucose sensors, a control algorithm and an insulin pump remains a huge challenge to researchers in diabetes

technology and there were presentations and posters on this subject from many groups from around the world.

A further highlight was a lecture titled ‘Intensive insulin therapy – impact of technology on depression’, given by Dr Katherine Barnard (the NIHR Evaluation, Trials and Studies Coordinating Centre, University of Southampton, UK). The study she presented, during the session on how modern technologies can influence glucose monitoring and insulin therapy, was a systematic review comparing the prevalence of comorbid depression in adults with Type 1 diabetes treated with either multiple daily injections of insulin or with continuous subcutaneous insulin infusion therapy. She concluded that there was a paucity of evidence available to distinguish the difference between comorbid depression associated with either therapy and outlined the need for further research to understand the relationship between depression and insulin therapy and how mood is influenced by individual factors.

The commercial highlights of the conference included an updated continuous glucose sensor from Medtronic, a new peritoneal insulin delivery system from Roche and a revised pump from Animas, allowing sensor data, including trends, to be viewed on the pump and included in bolus calculations.

The Enlite sensor from Medtronic is an updated continuous sensor with a reported 98% hypoglycemia detection rate [MEDTRONIC, UNPUBLISHED DATA]. It is compatible with most existing Medtronic hardware and differs from the existing sensor in being inserted at 90°. It is less rigid too. However, the accuracy data remains to be published in a peer-reviewed academic journal.

Peritoneal insulin has been a subject of much debate for many years with the potential for more rapid absorption, more physiological action with a greater hepatic action, particularly in regulating gluconeogenesis. At present, few people with diabetes use peritoneal insulin, as it requires an invasive procedure to fit the insulin reservoir

and then regular filling of the reservoir under the skin. The DiaPort system from Roche enables a conventional subcutaneous insulin pump to be connected to a peritoneal insulin system for management by a diabetologist.

The final commercial highlight of the conference was from Animas who demonstrated a sensor-augmented pump device called the ‘Vibe’, which will communicate with the DexCom Seven® sensor, increasing choice in the market for diabetes technology for patients and clinicians.

The ATTD conference launched the second edition of the ATTD yearbook and a free copy was given to each delegate. The ATTD first published its yearbook at last year’s conference in Basel (Switzerland). The yearbook is a packed publication covering the best research and knowledge in the field of advanced technology and treatment of diabetes from the last 12 months, as appreciated by the editors. The yearbook has PubMed-facilitated access and is free to view and download [1].

There were still a large percentage of delegates around for the last day and the rapid-fire oral presentations were well attended. The conference finished with closing remarks given by Phillip and an invitation was extended to attend the next ATTD meeting in 2012, which will be held in Barcelona (Spain).

Financial & competing interests disclosure

The authors have no relevant affiliations or financial involvement with any organization or entity with a financial interest in or financial conflict with the subject matter or materials discussed in the manuscript. This includes employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties.

No writing assistance was utilized in the production of this manuscript.

Reference

- 1 Phillip M, Battelino T: ATTD 2010 yearbook. *Int. J. Clin. Pract.* 65(Suppl. 170), 1–90 (2011).