



World Congress on **Diabetes and Pediatric Endocrinology**

Current treatment options and challenges in patients with Type 1 diabetes: Pharmacological, technical advances and future perspectives

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Type 1 diabetes mellitus imposes a significant burden of complications and mortality, despite important advances in treatment: subjects affected by this disease have also a worse quality of life-related to disease management. To overcome these challenges, different new approaches have been proposed, such as new insulin formulations or innovative devices.

The introduction of insulin pumps allows a more physiological insulin administration with a reduction of HbA1c level and hypoglycemic risk. New continuous glucose monitoring systems with better accuracy have allowed not only better glucose control, but also the improvement of the quality of life.

Integration of these devices with control algorithms brought to the creation of the first artificial pancreas, able to independently gain metabolic control without the risk of hypo- and hyperglycemic crisis. This approach has revolutionized the management of diabetes both in terms of quality of life and glucose control. However, complete independence from exogenous insulin will be obtained only by biological approaches that foresee the replacement of functional beta cells obtained from stem cells: this will be a major challenge but the the biggest hope for the subjects with type 1 diabetes.

We will outline the current scenario of innovative diabetes management both from a technological and biological point of view, and we will also forecast some cutting-edge approaches to reduce the challenges that hamper the definitive cure of diabetes