

## **ONLINE PREDICTION OF FORTHCOMING GLUCOSE PROFILE AND OUTCOMES FOR ADVICE ON INSULIN THERAPY: THE DIADVISOR CONCEPT**

**E. Renard**

*Endocrinology Department, CHU & University of Montpellier, Montpellier Cedex, France*

The presented European project aims at developing a unique tool called DIAdvisor™ to help diabetic patients in the better management of insulin therapy. By a prediction of glucose excursions, DIAdvisor™ is expected to warn the patient online about the risk of moving out of aimed glucose range. Moreover, the activation of an advisor component is scheduled to offer solutions to stay in a safe glucose range.

In a first Data Acquisition Trial, insulin delivery, meal intakes, CGM data as well as vital sign parameters such as heart and respiratory rates have been collected in 90 patients treated by a basal-bolus insulin regimen. Three days were spent in a Clinical Research Centre (CRC) to monitor patients in standardized conditions and get frequent plasma insulin and blood glucose measurements. Seven days were then spent at home, while the patients filled in a daily logbook and wore CGM and vital sign sensors. A last visit allowed blood sampling and data collection during a physical exercise bout. Moreover, a newly developed device was experimented to assess the feasibility of non-invasive glucose trans-dermal monitoring.

Generated from improved knowledge on glucose-insulin interactions, prediction and advisor algorithms have been installed on a Personal Digital Assistant (PDA), allowing patient data entry and wireless connections to glucose and vital sign sensors. Current CGM-given blood glucose level, computed predictions on glucose evolution and therapy advices are displayed on the PDA screen. This first prototype of a "mobile short-term blood glucose predictor and treatment advisor" is now tested in CRC.