



External artificial pancreas CF and personalized medicine

Dr Rabasa-Lhoret research team is focusing on clinical research in the field of obesity and diabetes in three fields:

The major focus of his multidisciplinary team is to develop an external artificial pancreas combining available insulin pumps and glucose sensors (small device providing multiple glucose values) with a software regulating automatically insulin pump based on glucose trend. This therapeutic approach could shortly revolutionize treatment by reduction both low and high blood sugar which should translate in major patient help benefits: less malaise as well as less devastating complications (blindness, kidney failure, etc.).

Cystic fibrosis (CF) is a frequent genetic disease affecting 1 person over 3500 with major lung damage leading to premature death. Life expectancy of CF patients has tremendously improved over the past decades. CF patient now face new complications including CF related diabetes (CFRD). Dr Rabasa-Lhoret's team investigates mechanisms involved in CFRD occurrence and its association with accelerated weight and lung function loss. His work suggests that earlier insulin introduction could improve patient's health.

Prediction of drug treatment response should reduce costs and side effects allowing personalized medicine. Dr Rabasa-Lhoret's team led the clinical part of a consortium establishing a panel of treatment efficacy biomarkers for type 2 diabetic patients. These blood tests should predict patient with a higher likelihood to better respond to a drug (e.g. more significant blood glucose drop without side effect).

Though obesity is a major risk factor for metabolic complication (e.g. diabetes, hypertension) our team has established that approximately 30% of obese patients surprisingly do not present such complications. Studies with these patient help to understand factors involved in the risk to develop metabolic complications. This work could lead preventive and curative avenues. Recent results suggest an involvement in persistent organic pollutant into the occurrence of metabolic complications.

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