The theme of this program of the French-speaking Society of Diabetology (SFD) was outlined by Fabrizio Andreelli, François Pattou and myself. We wish to thank all the expert participants from France as well as other countries who have contributed to our presentations covering the most recent basic and clinical data on this innovative surgical treatment of diabetes.

Not a single diabetologist, some 15 years ago, surgical procedure has thought that an operation could be the most effective therapy for type 2 diabetes. Focusing only on HbA1c targets blinded us to the fact that an obese patient who becomes diabetic stays obese, and develops specific diabetes-related morbidities. Moreover, many patients aiming to achieve tight glycaemic control have paid 'tribute' in terms of weight increase, with all of its potentially deleterious consequences on cardiovascular risk, respiratory disorders such a sleep apnoea and overall quality of life.

Bariatric surgery has become a potent therapeutic modality for the treatment of type 2 diabetes in obese patients because it appears able to achieve the main targets of preventing diabetic complications and improving the health impact of morbid obesity. Outcomes after surgically induced weight loss published over the past few years have been impressive. Meta-analysis show that diabetes was resolved (70%) or improved in more than 80% of patients, hyperlipidaemia improved in more than 70% of patients and hypertension was resolved in 60%, whereas sleep apnoea was improved in 80%. Among the surgically treated obese patients in the Swedish Obese Subjects (SOS) study, the benefits from the reduction of myocardial infarction and overall mortality over 10 years were almost exclusively seen in diabetic patients.

Loss of abdominal–visceral adiposity induced by surgery reduced insulin resistance and other relevant markers of chronic vascular inflammation, and improved endothelial dysfunction, and other key cardiac and atherothrombotic risk factors.

However, there is still considerable debate over the choice of operative procedure, optimal appropriate time for surgery, duration of effects, mechanisms behind the antidiabetic effects and the protective action on β cells. Some types of bariatric surgical procedures have proved not only effective for treating obesity, but also appear to be associated with endocrine changes that, independently of weight loss, give rise to remission or improvement of type 2 diabetes. The re-routing of nutrients observed in bypass surgery of the duodenum and proximal jejunum brings about significant endocrine changes (such as increased GLP-1 secretion) in the gastrointestinal system that also contribute to the glucose-lowering effects of these operations. In addition, new information from animal models and clinical research has led to a better understanding of the role of various intestinal signals in the antidiabetic effects of bariatric surgery.

Nevertheless, the risks that come with bariatric surgery need to be weighed in each prospective patient, and require the involvement of a multidisciplinary team that is experienced in patient selection, education, the operation and lifelong surveillance.

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