



“Melhor Nutrição para Melhor Saúde”

Ficha Técnica do Projeto

Tema do Projeto	Impact of pesticide contamination in weight loss in obese population
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Objetivos

Evaluate persistent organic pollutants (POPs, food contaminants) presence in human adipose tissue in an obese population subjected to bariatric surgery.

Assess its association with obesity comorbidities and weight loss after surgery.

Metodologia

Adipose tissue samples from an obese Portuguese population (body mass index, BMI>40; n=88) were collected during surgery at the Hospital São João. The levels of 13 POPs residues (organochloride pesticides and a dioxin) were determined by GC-ECD, and correlated with BMI reduction after surgery, metabolic profile and comorbidities.

Aspetos inovadores contidos no trabalho/projeto

This project demonstrated that human exposure to pollutants seems to be a key factor on the obesity pathogenesis and its comorbidities. In addition, this project highlighted the impact of POP levels in adipose tissue upon weight loss success. This project showed the degree of contamination of Portuguese obese patients and its putative correlation with a worse prognosis of the metabolic disease.

Principais conclusões

All adipose tissue samples evaluated have shown detectable levels of POPs.

There is a strong positive correlation between POP levels and adipocyte size (adipocyte hypertrophy) and, some of the known obesity comorbidities, such dyslipidaemia or hypertension; and a negative correlation with weight loss 6 months after surgery.

Thus, POP level in adipose tissue could be a predictor of unsuccessful weight loss in obese patients.

Accordingly, further monitoring studies are needed in an attempt to eliminate or reduce sources of food exposure, and also to provide information for epidemiological studies that establish an association between levels of contamination and prevalence of metabolic dysfunction.