

Gender modifies the relationship between weight increase during adult life and fasting plasma glucose in obese-overweight subjects

GIUSEPPE SEGHIERI² FLAVIA FRANCONI¹ FEDERICA TESI²
ROBERTO ANICHINI² ALESSANDRA DE BELLIS² GIANNA FABBRI²
RAFFAELLA MALAGOLI² COSTANZANARDO² GRAZIA PETRINI²

¹ DPT. DI SCIENZE DEL FARMACO, UNIVERSITA DI SASSARI, ITALY

²SERVIZIO DIETETICO-SPEDALI RIUNITI, PISTOIA, ITALY

Background and aims: Weight increase during adult life is a strong predictor of type 2 diabetes. Whether fasting plasma glucose (FPG) is likewise related to weight increase during the adult life in non-diabetic obese-overweight people and whether this relationship is different between the genders is the question asked by the present study.

Materials and methods: We studied 1014 overweight-obese, non-diabetic subjects (384M/630F) with BMI>25Kg/m² and FPG_i≥7mmol/l, who consequently came to our outpatient clinic to obtain dietetic advice. Weight increase was determined as the difference between actual weight and weight at 18yr (weight-diff.), including only patients with weight-diff>0.

Results: By univariate regression analysis FPG was significantly related to both actual BMI and weight-diff in males as well as in pre- and post-menopausal women. After adjusting for age and BMI, FPG was related to weight-diff only in women (either pre- or post-menopausal; p=0.01 for both). Odds Ratio for fasting hyperglycaemia (FPG>6.11mmol/L), for each weight-diff SD unit, adjusted for BMI and age, was 1.303; 95%CI:0.872-1.965; (p=ns) for males, 2.487; 95%CI:1.174-5.713; (p=0.02) for pre- and 2.066; 95%CI: 1.210-3.680; (p=0.01) for post-menopausal women.

Conclusions: FPG is related to BMI and weight-diff in non-diabetic overweight-obese people, while, after adjusting for age and BMI, weight increase after 18 yr seems to be linearly related to FPG only in women either prior to or after the menopause, independently predicting fasting hyperglycaemia only in these latter. Whether all this points to a different risk of diabetes attributable to weight increase in women compared to men remains to be ascertained.