doi:10.1017/S1368980012002017

27 – Pituitary hormone changes in adolescents with overweight/obesity under a multidisciplinary treatment programme: preliminary results of the evasion study

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Introduction: Numerous endocrine abnormalities are associated with obesity. The present study was aimed to evaluate the effects after 2 and 13 months of a multidisciplinary obesity treatment programme, called EVASYON, on pituitary hormone levels in adolescents with overweight/obesity.

Method: Thirty-five adolescents (16 girls/19 boys; mean BMI 31·56 (SD 4·70) kg/m^2; range: 25·01–41·23; mean age 14·08 (SD 1·11) years; range: 12·0–16·0) from Madrid were classified within the overweight/obesity ranges according to the International Obesity Task Force BMI criteria, and were voluntarily recruited into a longitudinal multidisciplinary intervention study based on calorie-restricted diet (10–40 %), increased physical activity (calorie expenditure = 15–23 kcal/kg body weight/week), psychological therapy and nutritional education for 13 months. The treatment period consisted of two phases: (i) intensive during the first 2 months (2 mo) and (ii) extensive during the consecutive 11 months (13 mo). This study only includes some preliminary data from one city and related to both intervention periods of the EVASYON programme. Pituitary hormones: follicle-stimulating hormone (FSH), luteinizing hormone (LH), thyrotropin hormone (TSH), growth hormone (GH), prolactin (PRL) and adrenocorticotropic hormone (ACTH) levels were measured before and after both intervention periods.

Results: PRL serum levels ($P < 0·05$) and BMI (5·54 %) decreased after 2 mo. After 13 mo FSH and TSH serum levels ($P < 0·05$) decreased and a tendency to decrease PRL serum levels together with decreased BMI (−7·35 %) values were shown. A positive correlation between PRL levels and BMI after 2 mo ($r = 0·333$; $P < 0·05$) was found.

Conclusions: These results suggest that weight reduction in adolescents with overweight/obesity under the EVASYON intervention programme can improve the endocrine disturbances associated with obesity.

doi:10.1017/S1368980012002029

28 – Insulin resistance among overweight/obese pre- and post-pubertal paediatric patients

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Aim: To verify the possible relationship of insulin resistance (IR) with pubertal stage.

Introduction: Scientific literature outlines that insulin sensitivity changes throughout the puberty. Obese females (F) show higher IR rates than males (M); different changes in fat mass, usually happening in puberty also among these patients, are generally claimed as an explanation.

Method: 755 overweight/obese patients (OW/OB; F 398, M 357; average age = 10·25 (SD 2·84) years) were considered. OW/OB was divided in two subgroups: pre-pubertal (PRE, Tanner's stage 1–3; F 219, M 227) and post-pubertal (POST, Tanner's 4 and 5; F 179, M 130). Statistical analysis used Student's t and χ^2 tests.