

## Hypoestrogenism and insulin resistance in premature ovarian insufficiency: is it time dependent?

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Hypoestrogenism in premature ovarian insufficiency (POI), defined as oligo/amenorrhoea, FSH>40 IU/L, estradiol<50 pmol/L in women younger than 40 years of age, induces weight gain, influences satiety center and changes metabolism of lipids, as well as adipose tissue metabolic processes. AIM of this study was to determine changes in insulin sensitivity depending of amenorrhoeic period (2, 3-5, over 6 years) in POI. SUBJECTS AND METHODS: I group: 555 women, 35.6±5.7 years old, BMI 22.7±3.9 kg/m<sup>2</sup>, II group: 209 women, 36.9±6.8 years old, BMI 23.0±3.8 kg/m<sup>2</sup>, III group: 95 women, 39.5 ± 5.6 years old, BMI 24.3 ± 4.7 kg/m<sup>2</sup>. Blood samples were taken at 8 am for: FSH, LH, estradiol, prolactin, testosterone, androstendion, dehydroepiandrosteron sulphate. RIA analysis were done. All other endocrine diseases were excluded. Oral glycosae tolerance test (OGTT) was performed with 75 gr of glucose and glycaemia and insulin were detected at 0.30.60.90.120. min. HOMA index, area under the curve (AUC), QUICKI, MATSUDA indexes were calculated and values were compared.

RESULTS: AUC has shown increasing tendencies during time, but without significant differences (189.6 ± 105.9 vs. 208.5 ± 139.0 vs. 221.6 ± 155.0), as well as HOMA index (2.44 ± 1.5 vs. 2.58 ± 1.5 vs. 2.72 ± 2.1, p 0.56). QUICKI and MATSUDA shown no differences. CONCLUSION: Majority women with POI have normal BMI. Hypoestrogenism, in untreated women with POI, induces slow time dependent changes in increasing weight, body recomposition, with changing of insulin sensitivity leading to cardiovascular diseases, worsening quality of life and shortening life expectancy.

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