

## D2-Thr92Ala, thyroid hormone levels and biochemical hypothyroidism in preeclampsia.

Procopciuc LM<sup>1</sup>, Caracostea G<sup>2</sup>, Hazi G<sup>3</sup>, Nemeti G<sup>2</sup>, Stamatian F<sup>2</sup>.

### Author information

- 1 a Department of Medical Biochemistry , "Iuliu Hatieganu" University of Medicine and Pharmacy , Cluj-Napoca , Romania.
- 2 b Department of Gynecology Clinic I , "Iuliu Hatieganu" University of Medicine and Pharmacy , Cluj-Napoca , Romania , and.
- 3 c Clinic of Endocrinology , Cluj-Napoca , Romania.

### Abstract

**AIM:** To identify if there is a relationship between the deiodinase D2-Thr92Ala genetic variant, thyroid hormone levels and biochemical hypothyroidism in preeclampsia.

**MATERIALS AND METHODS:** We genotyped 125 women with preeclampsia and 131 normal pregnant women using PCR-RFLP. Serum thyroid hormone levels were determined using ELISA.

**RESULTS:** Our study showed higher TSH and FT4 levels and lower FT3 levels in women with preeclampsia compared to normal pregnant women, with statistical significance for women with mild and severe preeclampsia. The risk to develop pregnancy-induced hypertension (PIH), mild or severe preeclampsia was increased in carriers of at least one D2-Ala92 allele. TSH and FT4 levels were significantly higher and FT3 levels were significantly lower in preeclamptic women with severe preeclampsia if they carried the D2-Ala92 allele compared to non-carriers. Pregnant women with PIH and mild preeclampsia, carriers of at least one D2-Ala92 allele, delivered at lower gestational age neonates with a lower birth weight compared to non-carriers, but the results were statistically significant only in severe preeclampsia.

**CONCLUSION:** The D2-Thr92Ala genetic variant is associated with the severity and the obstetric outcome of preeclampsia, and it also influences thyroid hormone levels. The study demonstrates non-thyroidal biochemical hypothyroidism - as a result of deiodination effects due to D2 genotypes.

**KEYWORDS:** Biochemical hypothyroidism; D2 genotypes; genetic and biochemical evaluation; preeclampsia; thyroid hormones levels