



# Structural evaluation of type 3 dopaminergic receptor gene (DRD3) in chronic anovulatory women

A.D.S. Santos<sup>1</sup>, R.A.A. Prado<sup>1</sup>, M.B. Melo<sup>2</sup>, M.R. Melo<sup>2</sup> and C.A. Longui<sup>2</sup>

<sup>1</sup>Departamento de Ginecologia e Obstetrícia, Santa Casa de Misericórdia de São Paulo, São Paulo, SP, Brasil

<sup>2</sup>Laboratório de Medicina Molecular, Departamento de Ciências Fisiológicas, Faculdade de Ciências Médicas da Santa Casa de São Paulo, São Paulo, SP, Brasil

Corresponding author: A.D.S. Santos

E-mail: andrea.danielle@globo.com

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**ABSTRACT.** Dopamine receptor type 3 (DRD3) expressed in the limbic system sites involved in the regulation of GnRH seems to play a role in neuroendocrine control. We hypothesized that women with chronic anovulation should show exacerbated secretion of prolactin (PRL) after thyrotropin-releasing hormone (TRH) stimulation test, having more chances for dopamine inhibitory dysfunction due to alterations in the structure of DRD3. The DRD3-coding region was evaluated in 60 women with chronic anovulation (35 without and 25 with hyperresponse of PRL after TRH stimulation), and in 34 controls. Statistically similar frequencies of homozygous AGC polymorphism (43.4 and 33.4%) and heterozygous polymorphism (33.4 and 47.9%) at position 9 were found in controls and patients, respectively. Homozygous GCG polymorphism at position 17 was identified in 3.4%

of the patients, while heterozygosis occurred in 20.8% of the patients and in 6.6% of the controls. The novel 41563\_41567delTAAGT polymorphism of DRD3 was identified in 14.7% of the controls and 8.6% of the women with chronic anovulation displaying hyperresponse of PRL after TRH stimulation. Alteration 41563\_41567delTAAGT of DRD3 was not found in patients who did not show hyperresponse of PRL after TRH stimulation. Normal baseline and peak levels of PRL and thyroid-stimulating hormone were similar for women with and without 41563\_41567delTAAGT in the DRD3 gene. It is concluded that the novel polymorphism in DRD3 identified in this study is not associated with the response of PRL to TRH stimulation in women with chronic anovulation.

**Key words:** Anovulation; Dopamine; Dopamine receptor type 3; Infertility