

Sex-Related Differences in Estrogen Receptors and Tumor Proliferation Factors in Macroprolactinomas

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Abstract

Prolactin-producing tumors represent nearly half of all pituitary tumors. The noticeable rate of aggressive clinical behavior in males with macroprolactinoma necessitates identifying novel genes and proteins which play a role in the process of tumorigenesis, tumor invasion to adjacent structures and resistance to medical treatment. ER α 36 expression which is a novel splice variant of traditional ER α 66 receptor has not been evaluated in the pituitary gland which is highly responsive to estrogen. In this cohort study, tumor samples from 62 patients with prolactinoma who underwent surgery during a period of eight years were evaluated for immunohistochemistry. ER α 36, ER α 66, Ki67 and p53 were measured by semi-quantitative immunoreactive score. A wide expression of ER α 36 even more than ER α 66 was found in normal pituitaries. This may imply the importance of non-genomic signaling pathway of estrogen in the pituitary. The scoring results of Ki67 showed that tumor proliferation rate was higher in males. Males also showed a greater mitotic count than women. Males presented larger and invasive tumors. There were no significant sex-related differences in the expression of the estrogen receptors and p53.



Biography:

Fatemeh has completed her Pharm.D at age 25 years and worked as a pharmacist for 9 years. Then she started studying pharmacology at PhD degree in Shahid Beheshti University. She achieved 1st rank among Shahid Beheshti university students at Entrance Exam of Pharmacology and Board Comprehensive Exam of Pharmacology. Her PhD GPA is 18.75. She is considered a talented student at university. She has published 4 papers, the most recent of which has been published in the official journal of pituitary society in 2020. She has been serving as a reviewer board member of the journal "Physiology and Pharmacology".

Speaker Publications:

1. "Carter JN, Tyson JE, Tolis G, Van Vliet S, Faiman C, Friesen HG. Prolactin-screening tumors and hypogonadism in 22 men. *N Engl J Med.* (1978) 299:847–52.
2. "Delgrange E, Trouillas J, Maiter D, Donckier J, Tourniaire J. Sex-related difference in the growth of prolactinomas: a clinical and proliferation marker study. *J Clin Endocrinol Metab.* (1997) 82:2102–7.
3. "Calle-Rodrigue RD, Giannini C, Scheithauer BW, Lloyd RV, Wollan PC, Kovacs KT, et al. Prolactinomas in male and female patients: a comparative clinicopathologic study. *Mayo Clin Proc.* (1998) 73:1046–52.
4. Delgrange E, Vasiljevic A, Wierinckx A, Francois P, Jouanneau E, Raverot G, Trouillas J. Expression of estrogen receptor alpha is associated with prolactin pituitary tumor prognosis and supports the sex-related difference in tumor growth. *Eur J Endocrinol.* (2015) 172:791–801.
5. "Liu R, Kain M, Wang L. Inactivation of X-linked tumor suppressor genes in human cancer. *Future Oncol.* (2012) 8:463–81.

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