Pituitary neuroendocrine tumor history

Old terminology

Clinically non-functioning pituitary neuroendocrine tumor

Clinically functioning pituitary neuroendocrine tumor

The 2017 World Health Organization classification of tumors of the pituitary gland, changes include the following: (1) a novel approach for classifying pituitary neuroendocrine tumors according to pituitary adenohypophyseal cell lineages; (2) changes to the histological grading of pituitary neuroendocrine tumors with the elimination of the term atypical adenoma.

The aim of the study was to check whether García-Martínez et al., from Alicante, Valencia, Albacete, Spain, can replicate, in an independent series, previous results showing that the molecular study of pituitary-specific gene expression complements the inmunohistochemical identification of pituitary neuroendocrine tumours.

They selected 112 patients (51 (46.4%) women; mean age 51.4±16 years; 102 macroadenomas (91.9%), 9 microadenomas (8.1%)) with complete clinical, radiological, immunohistochemical and molecular data from our data set of pituitary neuroendocrine tumours. Patients were different from those previously studied. We measured the expression of the pituitary-specific hormone genes and type 1 corticotrophin-releasing hormone and arginine vasopressin 1b receptors, by quantitative real-time polymerase chain reaction using TaqMan probes. Afterwards, we identified the different pituitary neuroendocrine tumour subtypes following the 2017 World Health Organization classification of pituitary tumours, calculating the concordance between their molecular and immuhistochemical identification. The concordance between molecular and immunohistochemical identification of functioning pituitary neuroendocrine tumours with the clinical diagnosis was globally similar to the previous series, where the SYBR Green technique was used instead of TaqMan probes. Our results also corroborated the poor correlation between molecular and immunohistochemical detection of the silent pituitary neuroendocrine tumour variants. This discrepancy was more remarkable in lactotroph, null-cell and plurihormonal pituitary neuroendocrine tumours. In conclusion, this study validates the results previously published by our group, highlighting a complementary role for the molecular study of the pituitary-specific hormone genes in the typification of pituitary neuroendocrine tumours subtypes [1)].

1)
García-Martínez A, Sottile J, Fajardo C, Riesgo P, Cámara R, Simal JA, Lamas C, Sandoval H, Aranda I, Picó A. Is it time to consider the expression of specific-pituitary hormone genes when typifying pituitary tumours? PLoS One. 2018 Jul 6;13(7):e0198877. doi: 10.1371/journal.pone.0198877. eCollection 2018. PubMed PMID: 29979686; PubMed Central PMCID: PMC6034784.