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4 - CHARACTERIZATION OF PITUITARY ADENOMAS BY IMMUNOHISTOCHEMISTRY OF PITUITARY-SPECIFIC TRANSCRIPTION FACTORS AND THEIR CORRELATION WITH HORMONAL SUBTYPES

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Resumen

Introduction: The immunohistochemical characterization of Pit-1, Tpit and SF-1 transcription factors allows the identification of the three adenohypophyseal cell lines and has been incorporated into the latest WHO classification of pituitary adenomas (PA).

Objectives: To quantify the protein expression of pituitary-specific transcription factors (TF) by immunohistochemistry (IHC) and to correlate these results with the identification based on hormonal protein expression. Moreover, to validate these results by qRT-PCR in a subset of samples.

Methods: We selected 144 PA with complete information. These adenomas had been previously classified according to the IHC of the pituitary hormones: 18 densely granulated somatotroph adenomas (DGSA), 17 sparsely granulated somatotroph adenomas (SGSA), 9 lactotroph adenomas, 49 gonadotroph adenomas, 18 corticotroph adenomas and 29 null cell adenomas. We quantified the immunohistochemical expression of Pit-1 (PA5-59662), Tpit (ab243028) and SF-1 (ab217317) (cutoff 5%) on Tissue Microarrays. We quantified the relative gene expression of TPIT, PIT-1, SF-1, GATA2 and ESR1 by qRT-PCR.

Results: The mean age of the patients was 54 years, 65 were women and 79 men. Three cases were eliminated due to their double tumor nature. 49 PA were Pit-1 IHC positive of which 18 expressed GH, 14 GH and PRL, 8 PRL, 2 TSH, 1 LH and TSH and 6 were null. 19 were Tpit IHC positive of which 10 were Cushing (expressed ACTH) and 9 were silent (8 expressed ACTH and 1 was only Tpit). 67 expressed SF-1 by IHC of which, 49 expressed FSH/LH and 18 only SF-1, without hormonal expression. 6 tumors were confirmed as null. Moreover, gene expression of TF agreed with the IHC identification.

Conclusions: The IHC study of the expression of pituitary-specific TF proteins allows a better identification of PitNETs, significantly reducing the percentage of null cell tumors.