Pituitary adenoma biomarker

Pituitary adenomas exhibit a wide range of behaviors. The prediction of aggressive or malignant behavior in pituitary adenomas remains challenging; however, the utility of biomarkers is rapidly evolving.

In a review, Mete et al., discuss potential biomarkers as they relate to aggressive behavior in pituitary adenomas. While detailed histological subtyping remains the best independent predictor of aggressive behavior in the majority of cases, evidence suggests that the additional analyses of FGFR4, MMP, PTTG, Ki67, p53, and deletions in chromosome 11 may contribute to decisions concerning management of aggressive pituitary adenomas [1].

see Ki67 for pituitary adenoma

A study aims to evaluate whether the serum Anterior Gradient-2 (AGR2) can be used as a potential biomarker screening in the diagnosis of Pituitary adenomas(PAs).

The serum AGR2 protein levels were preoperatively measured in 163 PA patients, 43 patients with other sellar lesions excluding PAs, 7 patients with prostate cancer as a positive control and 20 normal people(10 female and 10 male) using Enzyme-Linked ImmunoSorbent Assay (ELISA). Differences in the serum AGR2 level between different groups were analyzed for statistical significance with a Mann-Whitney U test.

The data showed that serum AGR2 level was significantly higher in the serum of PA patients (250.10±79.14ng/ml) than the patients with other sellar lesions (220.84±79.62ng/ml, P=0.017) and normal people (163.67±50.38ng/ml, P <0.001). Receiver operating characteristic (ROC) curve analysis was used. The detected area under the curve (AUC) was 0.835. The calculated optimal cut-off point for AGR2 level in serum samples was 158.63ng/ml (Youden index=0.564). The sensitivity was 91.4% and the specificity was 65.0%. Despite the variety of PA clinical features, the serum level of AGR2 are definite in PAs, although there may be a difference between male or female patients.

This data suggests AGR2 as a potential biomarker for the diagnosis of PAs [2].

1)
Mete O, Ezzat S, Asa SL. Biomarkers of aggressive pituitary adenomas. J Mol Endocrinol. 2012 Aug 30;49(2):R69-78. doi: 10.1530/JME-12-0113. Review. PubMed PMID: 22822048.
2)
Tohti M, Li J, Tang C, Wen G, Abdujilil A, Yizim P, Ma C. Serum AGR2 as a useful biomarker for pituitary adenomas. Clin Neurol Neurosurg. 2017 Jan 9;154:19-22. doi: 10.1016/j.clineuro.2017.01.004. [Epub ahead of print] PubMed PMID: 28092730.