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IMMUNOHISTOCHEMICAL MARKERS OF ADRENAL CORTICAL TUMORS

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INTRODUCTION: Adrenocortical tumors (ACTs) are usually divided in adenoma (ACA) or carcinoma (ACC) according to histopathologic characteristics. Some lesions are occasionally difficult to classify according to these criteria. We studied the use of some immunohistochemical markers to recognise the difference between malignant and benign tumors.

MATERIALS AND METHODS: 12 patients were studied affected by ACC and 10 by ACA (Table 1). Clinical evaluation and hormone analysis were performed in all patients who underwent to adrenalectomy. Immunohistochemistry was performed on adrenal tumors tissue except for one case in which materials come from lymph node metastasis. We analyzed Ki-67, IGF2, Ghrelin, PPARγ, and ACTH expression.

	Groups	
	ACCs N=12	ACAs N=10
Age (years) median (range)	48,00 (33-80)	45,00 (2-67)
Sex F:M	9:3	7:3
Clinical presentation:		
Incidentaloma (%)	5 (41,7%)	3 (30%)
Cushing's syndrome (%)	3 (25%)	3 (30%)
Virilization (%)	4 (33,3%)	0
Conn's syndrome (%)	0	40 (40%)
Tumor size (mm):	106,58 (58-180)	40,00 (15-85)

Table 1: Patient demographic in the two groups: ACCs and ACAs.

RESULTS: All ten ACAs showed a low Ki-67 <5%, while 4 out of 12 (33%) ACCs showed a high proliferative index (Ki-67>5%) (Fig.1). The Wilcoxon–Mann-Whitney test demonstrated difference between ACAs and ACCs for Ki-67 (P>0.025). No statistically significant differences between IGF2 (P<0.0462), Ghrelin (P<0.738), PPARγ (P<0.403), and ACTH (P<0.369) were found (Fig.2). We observed an overexpression of IGF2 in 50% of ACC (IGF2>60%) although there were not statistically differences for this marker between the two groups. Analysis based on Spearman correlation didn't find correlation between stage disease, tumor dimension and immunohistochemical markers in ACCs.

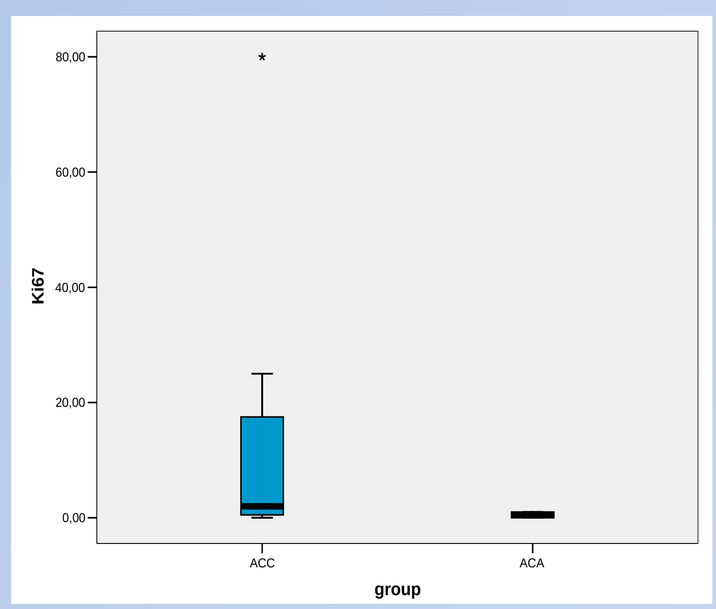

Fig. 1: Expression of Ki-67 in ACCs and ACAs.

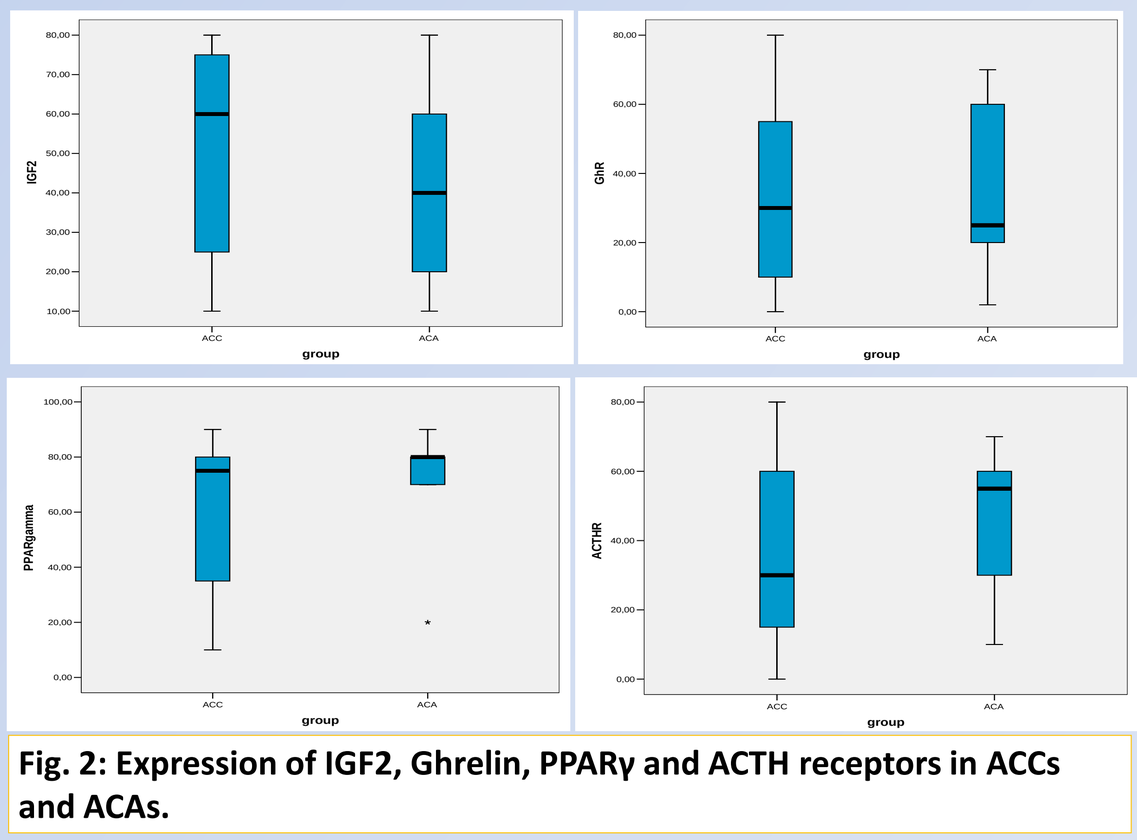

Fig. 2: Expression of IGF2, Ghrelin, PPARγ and ACTH receptors in ACCs and ACAs.

CONCLUSION: According to the literature, we confirmed that Ki-67 could be able to distinguish between ACAs and ACCs. Although many studies considered IGF2 as a malignant parameter, our results didn't permitt its use alone as marker to identify malignant lesions. Among the other different immunohistochemical markers, less commonly investigated in these tumors, no one seemed useful to discriminate adenoma from carcinoma. None immunohistochemical marker considered in our study was correlated with the characteristics of size or local extension of lesions. Therefore, we need more studies on higher number of patients to obtain much more significant data about IHC utility.