Natural history of a large cohort of pituitary incidentalomas

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INTRODUCTION
The widespread use of sensitive neuroradiological imaging studies (i.e. computed tomography and magnetic resonance imaging) over the last decades resulted in an increased number of asymptomatic pituitary lesions diagnosed. The management of these so-called “pituitary incidentalomas” is still controversial, due to the limited data so far available concerning both the clinical relevance and the natural history of such incidentally discovered pituitary masses.

MATERIALS AND METHODS
The aim of this observational, retrospective, multicenter study was to analyze the clinical presentation and the natural history of a large cohort of patients affected by pituitary incidentaloma (300 patients) followed in two Italian tertiary referral centers.

DIAGNOSIS

<table>
<thead>
<tr>
<th>Population characteristics</th>
<th>M / F (%)</th>
<th>Age</th>
<th>Age M vs. F</th>
<th>Micro / macro (%)</th>
<th>M / F micro vs. macro (%)</th>
<th>Mean diameter</th>
<th>Pituitary deficiencies (%)</th>
<th>Deficiency micro vs. macro (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M / F (%)</td>
<td>105 (35 %) / 195 (65 %)</td>
<td>49.0 ± 17.8 y</td>
<td>56.9 ± 17.4 y / 44.7 ± 16.5 y</td>
<td>167 (56 %) / 133 (44 %)</td>
<td>26 (25 %) / 79 (75 %)</td>
<td>141 (72 %) / 54 (28 %)</td>
<td>10.6 ± 8.5 mm</td>
<td>64 (21 %) / 47 (35 %)</td>
</tr>
</tbody>
</table>

p < 0.001

The incidence of new pituitary endocrine deficiencies was comparable in microadenomas and macroadenomas (7% vs 9%, respectively).

No spontaneous improvement of pituitary function has been observed.

FOLLOW UP

Hormonal follow up

<table>
<thead>
<tr>
<th>Patients</th>
<th>148</th>
</tr>
</thead>
</table>

Median follow up (range) 3 y (0-27)

New pituitary deficiency (%) 11 (7 %)

Stability of function (%) 137 (93 %)

Endocrine disfunction ad diagnosis

Endocrine disfunction ad diagnosis

<table>
<thead>
<tr>
<th>Neurological symptoms not related to the presence of adenoma</th>
<th>Pituitary dysfunction not confirmed</th>
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Imaging Follow up

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<tr>
<th>Patients</th>
<th>156</th>
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Median follow up (range) 3 y (0-32)

Growth (%) 27 (17 %)*

Stability (%) 104 (67 %)

Reduction (%) 25 (16 %)

The radiological and biochemical changes were concordant only in 69 % of patients.

CONCLUSION
In our series, macroadenomas are more frequently found in males, and more prone to volumetric growth over time. Pituitary function is altered in about 20% of patients at diagnosis, with further deficit onset during the follow up in about 7% of patients; these changes are not always concordant with radiological changes, remarking that, apart from radiological assessment, a periodical biochemical follow up is also needed in these patients.