THE OUTCOMES OF THE TRANSSPHENOIDAL ADENOMECTOMY IN PATIENTS WITH ACROMEGALY

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INTRODUCTION

- Acromegaly is a chronic disorder caused by growth hormone (GH) hyperproduction which leads to significant morbidity and mortality primarily due to cardiovascular and respiratory complications.
- Pituitary adenoma is the main cause of GH’s hyperproduction.
- By current guidelines transsphenoidal surgery (TSS) is the first-line treatment in acromegaly patients.

OBJECTIVES

To evaluate the results of TSS in acromegaly patients 6 months after surgery

METHODS

- A total of 70 patients were enrolled into the study
- Majority of our patients (74%) had macroadenomas, only sixteen patients (26%) had microadenomas.
- All TSS were performed by one neurosurgeon
- 6 months after surgery a nadir serum GH within 2 hours after 75g of oral glucose and IGF-1 were estimated
- Remission of acromegaly was considered as:
  ✓ nadir serum GH below 0.4 μg/L after an oral glucose load
  ✓ age-normalized serum IGF-1 value

Patient Characteristics

<table>
<thead>
<tr>
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<th>Mean ± SD</th>
<th>min – max</th>
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<tbody>
<tr>
<td>Age, yr</td>
<td>50.3 ± 12.5</td>
<td>25 – 72</td>
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<tr>
<td>Duration of disease, yr</td>
<td>6.6 ± 3.2</td>
<td>3 – 15</td>
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<tr>
<td>Basal GH’s level, μg/L</td>
<td>34.2 ± 41.7</td>
<td>1.2 – 192.0</td>
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<tr>
<td>IGF-1_p/IGF-1_ULN ratio</td>
<td>3.3 ± 1.4</td>
<td>1.01 – 7.3</td>
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<td>Size of pituitary adenomas, mm</td>
<td>16.7 ± 8.6</td>
<td>4.3 – 46.0</td>
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RESULTS

- Acromegaly remission was confirmed in 18 (26%) patients
- Remission was established in 50% (9 out of 18) patients with the pituitary microadenomas. Among patients with macroadenomas remission was proved in 17% (9 out of 52) cases
- Patients with the persisting disease have demonstrated significantly higher initial basal GH level (42.1 ± 6.7 vs 13.1 ± 4.9 μg/L, p<0.0005) and higher initial IGF-1_p/IGF-1_ULN ratio (3.59 ± 0.22 vs 2.51 ± 0.20, p<0.0004)

Remission rates

![Remission rates graph]

Initial IGF-1_p/ULN ratio and basal GH level

![Graph showing initial IGF-1_p/ULN ratio and basal GH level]

CONCLUSIONS

- According to our data TSS was effective in 26% cases
- The rather low remission rate was associated with macroadenomas predominance in our study group
- Microadenoma presence, lower initial basal GH level and IGF-1_p/IGF-1_ULN ratio increased the probability of remission