DEUTSCHES AKROMEGALIE REGISTER

Primary Surgical Therapy of Acromegaly - Results and Prognostic Parameters from the German Acromegaly Register

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for the Participants of the German Acromegaly Register

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Introduction

Surgery is used as a first-line therapy in many patients with acromegaly. We analyzed the German Acromegaly Register to investigate its efficacy and search for predictive factors.

The German Acromegaly Register is an initiative of the Pituitary Working Group of the German Endocrine Society. The aim of the German Acromegaly Register is to collect data on patients suffering from acromegaly in Germany, both retrospectively and prospectively.

Methods

To assure correct and uniform data entry, two trained nurses visit all centers for data acquisition. GH and IGF-1 levels are those reported by case notes. Due to variations in assays and reference ranges, normalization of IGF-1 is assessed using local criteria. Results are expressed as median (±interquartile ranges). GraphPad Prism 4.0 (GraphPad Software Inc., San Diego, USA) was used for statistical analyses. Sponsorship is provided by an unrestricted grant from Novartis Oncology, Germany.

Results

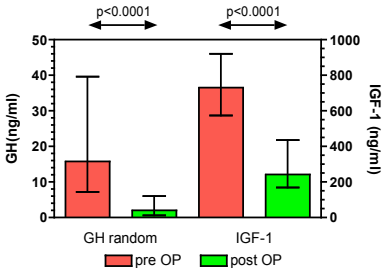
1) At the time of data lock, 1485 patients had been enrolled into the register.

Eight hundred forty two patients (56.7%) were primarily treated by surgery, with biochemical data without concomitant treatment available in 554 patients (m 46.0%, f 54.0%, median age (range): 46.0 (13-73) years).

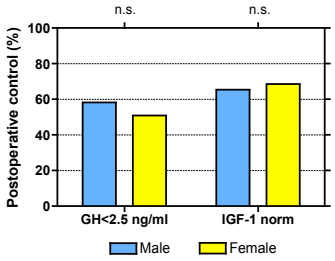
Random GH and IGF-1 levels prior to therapy were 15.8 (0.2-620.0) ng/ml and 731.0 (118-1700) ng/ml, respectively.

Radiological evaluation revealed micro- and macroadenomas in 22.9% and 77.1%, respectively.

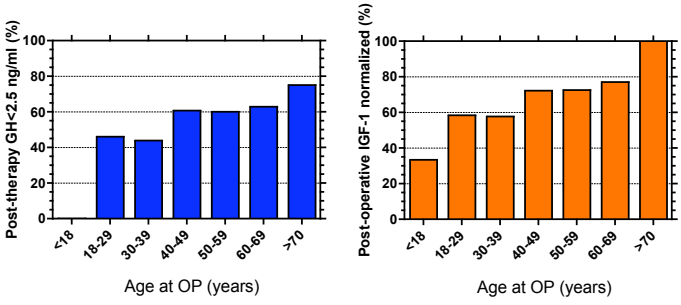
During postoperativ evaluation after 9.8 months, GH levels <2.5 ng/ml were determined in 54.3% of subjects analyzed, and normalization of IGF-1 in 65.9%.



2) The results of surgery did not differ significantly with regard to patient's sex.

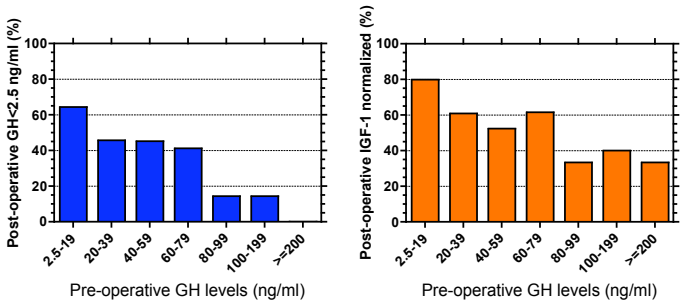


3) A separate analysis for age decades demonstrated increasing success rates of surgery to control GH and normalize IGF-1 levels with age.

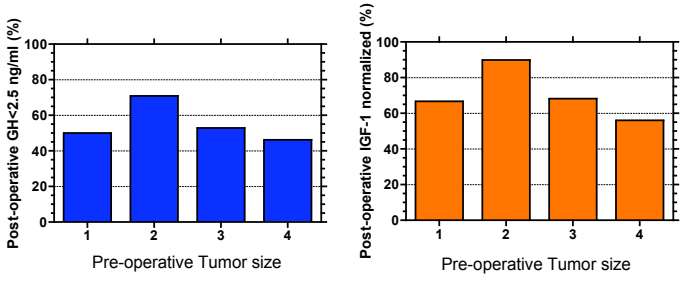


4) Further sub-analysis revealed declining success rates of surgery with higher preoperative GH levels, both with regard to control of GH and normalization of IGF-1.

Preoperative GH levels above 80 ng/ml were associated with a relevant drop in surgical success rates, with control of GH in less than 15% of patients and normalization of IGF-1 in less than 40%.



5) Increasing tumor size scores from microadenoma (2) to macroadenoma (3) and macroadenoma with extrasellar extension (4) were associated with decreasing success rates, both for postoperative GH control (70.9%, 52.9%, 46.1%) and IGF-1 normalization (89.8%, 68.1%, 56.0%). ((1) no visible tumor.)



Summary

- Primary surgery allowed for biochemical control in a relevant number of patients.
- Older patients, patients with microadenomas, and patients with pre-treatment GH levels below 80 ng/ml demonstrated the highest control rates by primary surgery.

Participants of the German Acromegaly Register:

Allolio B, Badenhoop K, Bender G, Biering H, Blossey HC, Blum H, Bogner U, Brabant G, Buchfelder M, Caspar-Bell G, Demtröder F, Diederich S, Droste M, Engelbach M, Faust M, Finke R, Fölsch UR, Gain T, Gräf KJ, Gerbert B, Großendorf M, Hampel R, Happ J, Heckmann C, Hehrmann R, Heike M, Herrmann BL, Höffken K, Hüfner M, Jacobeit J, Jaursch-Hancke C, Jockenhövel F, Knippert A, Koch C, Kornely E, Krone W, Lehnert H, Levasseur S, Lößner C, Mann K, Matern S, Meuser J, Meyer A, Minnemann T, Mönig HI, Müller UA, Paschke R, Petersenn S, Pfeiffer A, Plöckinger U, Raue F, Reincke M, Reschke K, Rudorff KH, Rühle H, Santen R, Schöfl C, Schopohl J, Schories M, Schröder F, Schröder HE, Schröder U, Schulte HM, Stamm B, Steinmetz M, Strasburger CJ, Sturmvoll M, Tharandt L, Tuschy U, von Werder K, Weber MM, Wiedenmann B, Wiesner TD, Würl K, Zeuzem S