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The German Acromegaly Register: Results in 1000 Patients

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for the Participants of the German Acromegaly Register

DEUTSCHES AKROMEGALIE REGISTER

Background

The German Acromegaly Register extracts relevant data on diagnostic procedures (Dx), primary and secondary therapeutic strategies (Tx) and their results, as well as co-morbidity and mortality. Analysis of these data will lead to diagnostic and therapeutic improvements. Approx. 4-5000 pts. are expected to be finally included.

Methods

Treatment centers are visited by two trained study nurses, who extract data from the patient charts, which are then transferred into the databank in the study center in Berlin. An error check system controls the correctness of the entries. All centers will be re-visited after 3, 5 and after 7 yrs. The British acromegaly database software has been adapted for use in Germany.

Summary

Approx. 20-25% of the pts have so far been included. Time delay from first symptoms to Dx remains a problem. Surgical success improved in successive time periods. Data from 1993-2004 reveal a surgical success rate (strict criteria for cure) comparable to the literature (1,2). Re-operation, DA and SSA were effective sec. Tx in approx. 25, 33 and 40% respect. (GH-cure and control).

Results

Table 1 Epidemiology

Sex (f/m) ratio		Center distribution	
1.21 (547:435)		University	13 (522 pts)
		Other hospital	6 (143 pts)
		Family doctor	11 (335 pts)
Age at Dx (years)		**Time interval (years): 1st symptom to Dx**	
<20	26 pts	< 5	27.2 %
20-40	374	5-10	14.5 %
40-60	467	10-15	11.0 %
>60	103	>15	6.5 %
unknown	30	unknown	40.8 %

There is a preponderance of female patients. Almost equal numbers of patients are cared for in university and non-university centers. Only one quarter of patients is diagnosed within 5 years after the onset of symptoms.

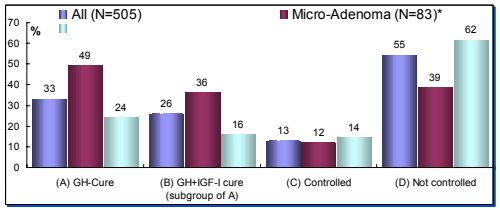
Table 2 Results of primary treatment (median GH values)

Primary Treatment	N	GH at Diagnosis	GH after/during prim. tx
Surgery – all	800	16.4	2.4
No pre-OP SSA-Tx	617	16.4	2.5
SSA pre-OP Tx* (21.7% of OP-pts)	183	15.7	2.0
Dopamin agonist (DA)**	67	12.6	6.1
Somatostaton-analog (SSA)**	43	8.3	2.8
Irradiation* - all	16	4.2	2.9
No additonal Tx	10	4.2	2.9
Plus mededical Tx	6	5.3	3.5

* Pre-OP SSA-Tx for volume reduction
** at 1 yr of DA/SSA-Tx or 1 yr following irradiation

Surgery was the primary method of Tx in 80% of the 1000 pts. Almost one quarter of them received prior SSA Tx in an atttempt to reduce tumor volume and GH concentration preoperatively. 11% of the patients received primary medical treatment and no surgery.

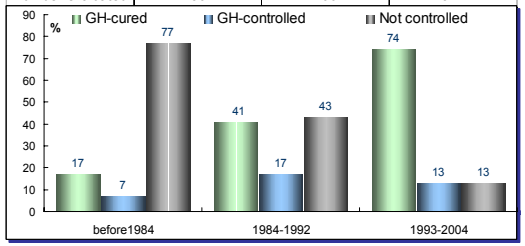
Figure 1
Surgery: Rates of GH cure, GH+IGF-I-cure and control. N = 505[1]



GH-Cure: GH <1.0 µg/L. Definition of cure does not include IGF-I values for this calculation. GH+IGF-I-cure: GH <1.0 and IGF-I normal. Controlled: GH >1.0 and <2.5 µg/L.
[1] Insufficient information in the remaining 295 patients.
As expected, surgical success was better in smaller than in larger adenomas. However, even in microadenomas, GH+IGF-I cure by surgery was achieved in only 36% of pts (including results in early time periods). However, surgical success improved considerably in progressive time periods (see Fig. 2). An analysis of cure rates in specialized and not-specialized centers remains to be done.

Fig. 2 Surgical success in progressive time periods, all adenoma sizes

	before1984	1984-1992	1993-2004
Total number	109	205	486
Insufficient data	79	99	112
Number evaluated	30	106	374



Surgical success improved considerably in progressive time periods, probably due to improved surgical techniques and expertise. During the earlier years, criteria for cure were often less severe and surgery was often aimed at GH concentrations below 5 or even 10 µg/L. (for this calculation, present day criteria were used). The relatively high percentage of GH-cured patients 1993-2004 may be due to the participation of several specialized centers. An analysis of specialized versus not-specialized centers remains to be done.

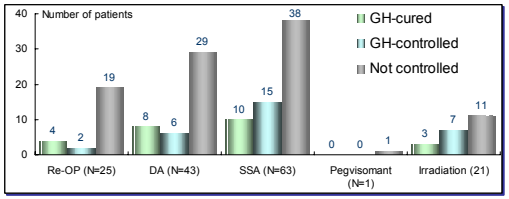
Discussion

The register provides a basis for further analysis and improvement. The data are preliminary, since subgroup numbers are small and analysis is based on only approx. 25% of the expected total number of patients in Germany. Based on the accumulated experience, the register aims to increase the quality of documentation and develops guidelines for patient evaluation and treatment options.

References: Fahlbusch R, Honegger J, Buchfelder M (1992). Endocrinol Metab Clin North Am 21(3):669-692. Laws ER, Vance ML, Thapar K (2000). Horm Res 53 (Suppl 3):71-75.

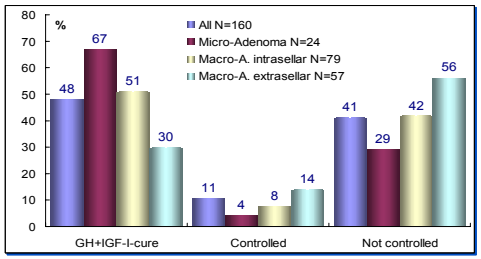
Results continued

Fig. 3
Results of secondary therapy after/into one year of 2nd treatment (N=153)*



*A total of 415 patients received secondary therapy after surgery. However, only data from 153 pts could as yet be evaluated and are presented here. GH was <1.0 or <2.5 following repeated OP (n=25) in 4 and 2 pts (24%); DA in 8 and 6 pts (33%); SSA in 10 and 15 pts (40%) and (RAD (n=21) in 3 and 7 (48%). Overall, secondary treatment still left a substantial number of patients not controlled. Secondary surgery was least effective.

Fig. 4 Surgical results:
Paired data for patients operated1993-2004 (N=160)



This analysis shows that the cure rate (GH <1.0 µg/L plus normal IGF-I) for microadenomas in a large population from different centers is similar to that published in the literature (1,2). The cure rate is 2/3 in micro- but only 1/3 in extrasellar macroadenomas. Of the 94 pts GH/IGF-cured or GH-controlled, 41 had pre-OP SSA-Tx for volume reduction and 53 had not.

Participating Centers: Biering H, Blossey HC, Blum H, Bogner U, Caspar-Bell G, Demtröder F, Diederich S, Droste M, Faust M, Finke R, Gräf KJ, Gerbert B, Grußendorf M, Hampel R, Hehrmann R, Herrmann BL, Höffken K, Hüfner M, Jacobeit J, Jockenhövel F, Knippert A, Koch C, Krone W, Lehnert H, Lößner C, Mann K, Meuser J, Meyer A, Mönig HI, Müller UA, Paschke R, Petersenn S, Pfeiffer A, Plöckinger U, Raue F, Reincke M, Reschke K, Rühle H, Schopohl J, Schories M, Schröder H, Schröder HE, Schröder U, Schulte HM, Strasburger CJ, Tuschy U, von Werder K, Weber MM; Würl K,

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