



Comprehensive Geriatric Assessment of Elderly Cases With Acromegaly

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Introduction

•Recently, health care of the elderly has become increasingly important, and a comprehensive geriatric assessment is essential to improve the health of the geriatric population

•Herein we aimed to evaluate cognitive and functional changes in elderly cases with acromegaly.

Methods

•Twenty-six elderly cases with acromegaly (controlled/uncontrolled:15/11) and 20 age, gender and body-mass index matched cases without acromegaly were included.

•Presence of concomitant diseases and educational level were not different between the groups.

•Cognitive functions were evaluated with *Mini Mental State Exam (MMSE)*, affective status with *Geriatric Depression Scale (GDS)*, activities of daily living with *Katz index*, *instrumental activities of daily living (IADL)* with *Lawton scale*, and nutritional status with *Mini Nutritional Assessment (MNA)*.

•For body composition bioimpedance analysis (BIA), for functional mobility *6-m walking speed test (6m-WST)* and for overall muscle strength *handgrip-strength test (HST)* were performed.

Results

Table 1. Demographic data, BMI and hormone levels of the two groups

	ACROMEGALY (n=26)	CONTROL GROUP (n=20)	p
Age (years)	67.3±6.3	67.2±4.7	0.9
Gender (F/M)	15/11	10/10	0.3
BMI (kg/m ²)	30±5.3	27.8±4.1	0.1
GH † (ng/dl)	0.9 [0.4-1.8]	0.4 [0.1-0.9]	0.03*
IGF-1† (ng/dl)	151.5 [117-267]	123.5 [87.4-159.5]	0.02*

† The results are presented as median and interquartile range [IQR]

Table 2. Comparison of cognitive functions and activities between the two groups

	ACROMEGALY (n=26)	CONTROL GROUP (n=20)	p
MMSE	24.5 [21.4-26]	29 [28-30]	0.001*
GDS	4 [3-7]	2.5 [0.3-5]	0.07
Katz index	0 [0-0.3]	0 [0-0]	0.02*
IADL	16 [13.8-17]	17 [16-17]	0.09
MNA	25.3 [22.9-27]	25.3 [24.5-27.9]	0.2

The results are presented as median and interquartile range [IQR]

• More cases with acromegaly had risk for malnutrition (Fig. 1).

• In the entire cohort cognitive functions decreased as IGF-1 levels increased ($r=-0.4, p=0.02$). (Fig. 2)

Figure 1. Evaluation of the groups based on malnutrition

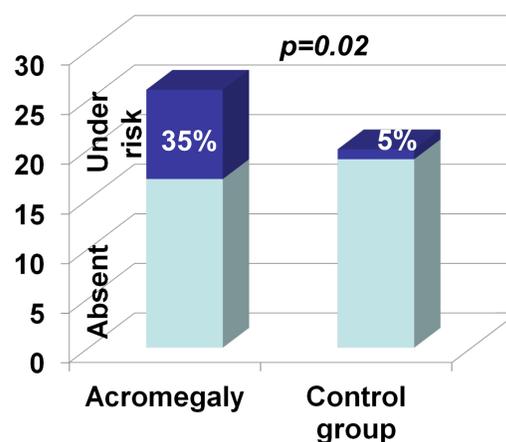


Figure 2. Correlation between IGF-1 and MMSE in entire cohort

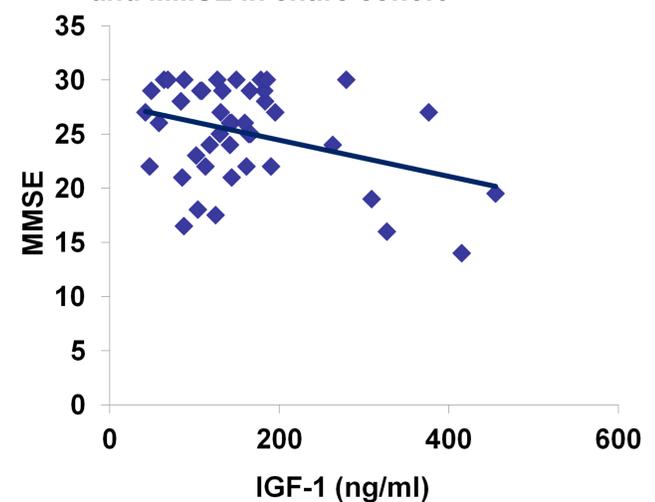


Table 3. Evaluation of body composition, functional mobility and muscle strength in both groups

	ACROMEGALY (n=26)	CONTROL GROUP (n=20)	p
BIA	7.6 [6.9-9.3]	7.9 [6.9-8.8]	0.9
6m-WST	9 [7.4-10]	8 [6.9-9]	0.3
HST-right	19.2 [14.3-23]	16.3 [10.3-18.9]	0.1
HST-left	16.3 [11.5-21.8]	14 [9.7-18.9]	0.2

The results are presented as median and interquartile range [IQR]

• In acromegaly GH and IGF-1 were positively correlated with the results of 6m-WST ($r=0.4, p=0.04$ and $r=0.5, p=0.02$), showing decreased functional mobility with increased GH and IGF-1 levels.

• Similarly, in the entire group GH and IGF-1 levels were positively correlated with 6m-WST ($r=0.3, p=0.004$ and $r=0.4, p=0.01$) (Figure 3)

• In acromegaly group as well as in the whole cohort IGF-1 was related with decreased score of IADL ($r=-0.4, p=0.03$ and $r=-0.4, p=0.02$, respectively) (Figure 4).

• In acromegaly increased GH was associated with decreased right-sided handgrip-strength ($r=-0.4, p=0.03$).

Figure 3. Correlation of 6m-WST with GH and IGF-1 levels in the entire cohort

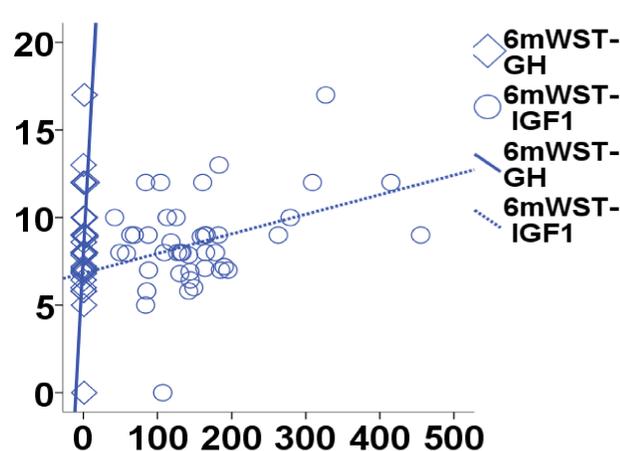
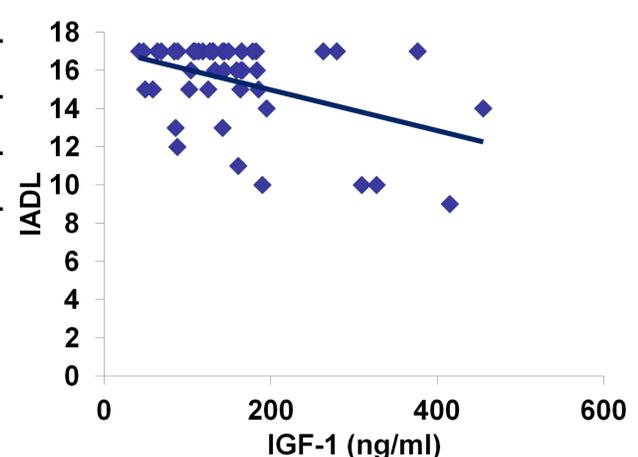


Figure 4. Correlation between IADL and IGF-1 in the entire cohort



Conclusion

Acromegaly causes an additional burden on cognitive functions, risk of malnutrition, functional mobility and instrumental daily living activities in geriatric population. A multidisciplinary, more comprehensive approach is necessary for acromegaly cases especially when they get elderly.