

# Auditory changes in acromegaly

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## INTRODUCTION

Certain sensory system functions are affected somehow in acromegaly, however auditory complications have not been identified in detail yet. It is possible that widespread changes in acromegaly may also affect auditory system. We aimed to determine the changes involving auditory system in cases with acromegaly.

## METHODS/DESIGN

•Otological examination of 41 cases with acromegaly (active n=22, inactive n=19) were compared with that of age and gender- matched 42 healthy subjects (HS).

•All cases in acromegaly group (AG) underwent examination with pure tone audiometry (PTA), speech audiometry for speech discrimination (SD), tympanometry, stapedius reflex (SR) evaluation and otoacoustic emission (OAE) tests whereas the control group had only otological examination and PTA.

•Additionally, previously performed paranasal sinus computed tomography of all cases with acromegaly and control subjects were obtained to measure the length of Internal Acoustic Canal (IAC).

## RESULTS

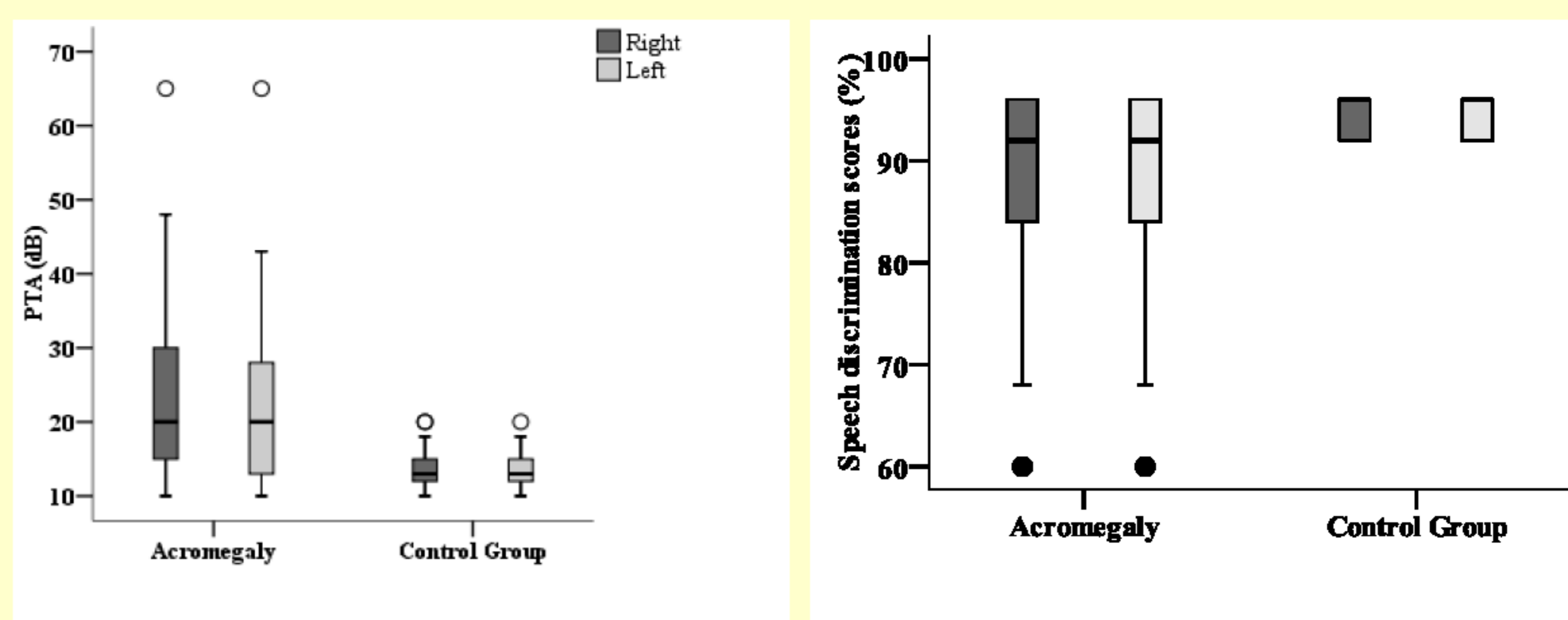
**Table 1. Auditory findings of cases with acromegaly and healthy subjects**

	Acromegaly (n=41)	Healthy subjects (n=42)	p
<b>PTA (dB) †</b>			
Right	20 [15-30]	13 [12-15]	<0.001*
Left	20 [13-28]	13 [12-15]	<0.001*
<b>Bone conduction (dB) †</b>			
Right	15 [10-20]	13 [12-15]	0.5
Left	15 [10-23.5]	13 [12-15]	0.8
<b>SD score (%) †</b>			
Right	92 [84-96]	96 [92-96]	0.002*
Left	92 [84-96]	96 [92-96]	0.002*
<b>IAC-length (mm) †</b>			
Right	4.5 [4.1-5.3]	4.9 [4.4-6.2]	0.04*
Left	4.5 [4.2-5.4]	5.2 [5-7]	0.009*

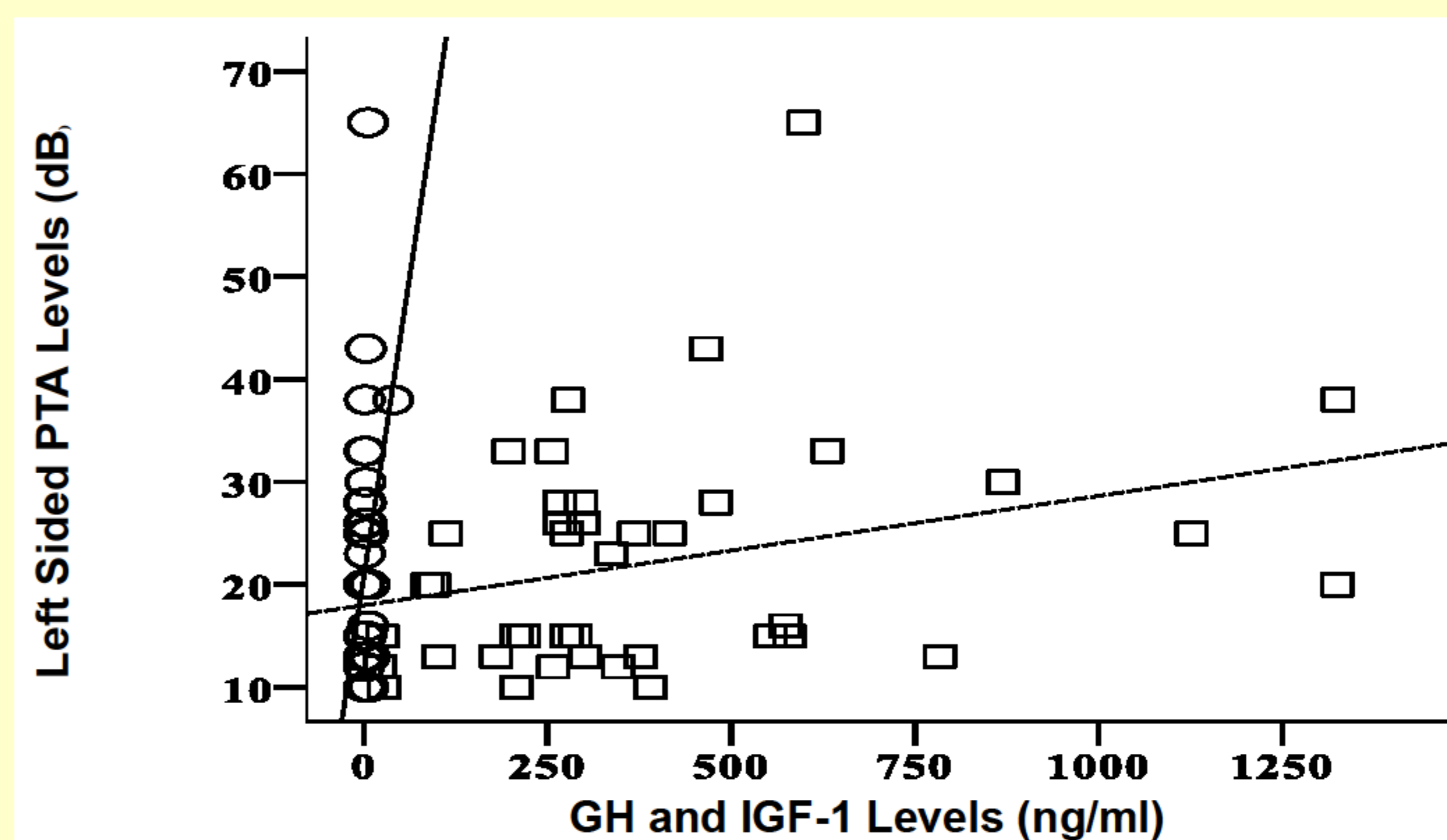
†Data was expressed as median and IQR.

PTA pure tone audiometry, SD speech discrimination, IAC internal acoustic canal

- Thirteen (32%) cases with acromegaly had hearing loss
  - 7 (54%) had sensorineural type
  - 6 (46%) had conductive type hearing loss.



**Figure 1.** Comparison of pure tone audiometry (PTA) values and speech discrimination scores between acromegaly and control groups



**Figure 2.** Correlation between left sided PTA values and, GH and IGF-1 levels in cases with acromegaly. Circles and straight line represent the correlation between PTA and GH, squares and dashed line represent the correlation, between PTA and IGF-1

## CONCLUSIONS

Acromegaly may cause certain changes in auditory system. These changes may be multifactorial causing both conductive and sensorineural defects.