EVALUATION OF QT DISPERSION AT THE TIME OF DIAGNOSIS AND AT THE END OF FOLLOW UP IN ACROMEGALY PATIENTS

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BACKGROUND

- Cardiac rythm abnormalities are important in acromegaly patients and they can be a cause for sudden death. Establishing the clinic determinants of ventricular arrhythmias is important for the risk assesment in those patients. QT dispersion can be used to detect proarrhythmia. Increased QT dispersion is related with increased risk of arrhythmia.
- In this study we have aimed to calculate the QT dispersion in acromegaly patients and reveal its correlation with growth hormone (GH), insulin like growth factor-1 (IGF-1).

MATERIAL AND METHOD

- 41 acromegaly patients were enrolled in the study. Another 41 patients with similar age, sex and comorbid disease distrubition have constituted the control group. We have evaluated the electrocardiograms (ECG) of the acromegaly patients at the time of diagnosis (baseline) and at the end of follow up (post follow up). Only one ECG was provided from each patient in the control group. The longest (QT max), the shortest QT (QT min), QT dispersion, corrected QT max (QTc max), QTc min and QTc dispersion were calculated.

RESULTS

- Baseline QT max, QT dispersion, QTc max and QTc dispersion intervals of the acromegaly patients were significantly longer than the control group. There wasn't any difference between the groups in terms of QT min and QTc min (Table 1).
- We have detected that post follow up QTc max and QTc dispersion were significantly shorter compared to baseline intervals (p=0.005 and p=0.024, respectively). There wasn't any significant difference between baseline and post follow up QT max, QT min, QT dispersion and QTc min intervals (Table 2).
- There wasn't any significant difference in between the post follow up QT intervals of acromegaly patients and the control group (Table 3).
- We have evaluated the relation of QT intervals with GH and IGF-1 in each group. Except the correlation of GH with QTc dispersion in post follow up acromegaly patients (r=-0.438, p=0.011), we could not show any other relation between GH, IGF-1 and the other QT parameters (for all parameters, p>0.05).
- QT intervals have not been found to be associated with age and BMI of the individuals (for all parameters, p>0.05). We have detected a significant positive correlation between disease duration and QTc dispersion in acromegaly patients (r= 0.440, p=0.009).

Table 1. Comparision of the baseline QT intervals of the acromegaly patients with the control group

	Acromegaly (baseline) (n=41)	Control (n=41)	p
QT max (ms)	387.73 ± 25.30	373.73 ± 26.33	**0.016**
QT min (ms)	317.88 ± 22.55	312.46 ± 23.09	0.286
QT dispersion (ms)	70.10 ± 10.51	61.76 ± 12.18	**0.001**
QTc max (ms)	422.76 ± 20.82	408.27 ± 17.08	**0.001**
QTc min (ms)	345.59 ± 17.36	339.51 ± 13.34	0.080
QT c dispersion (ms)	77.07 ± 12.34	68.02 ± 13.13	**0.002**

Table 2. Comparision of baseline and post follow up QT intervals of the acromegaly patients

	Baseline (n=35)	Post follow up (n=35)	p
QT max (ms)	391.42 ± 24.50	383.20 ± 15.22	0.128
QT min (ms)	320.88 ± 20.05	317.42 ± 13.55	0.430
QT dispersion (ms)	70.82 ± 9.94	65.77 ± 10.59	0.054
QTc max (ms)	422.85 ± 20.88	410.23 ± 15.33	**0.005**
QTc min (ms)	344.88 ± 18.28	337.86 ± 13.64	0.051
QT c dispersion (ms)	77.85 ± 10.83	71.51 ± 9.83	**0.024**

Table 3. Comparision of post follow up QT intervals of the acromegaly group with the control

	Acromegaly- post follow up (n=35)	Control (n=41)	p
QT max (ms)	383.20 ± 15.22	373.73 ± 26.33	0.055
QT min (ms)	317.42 ± 13.55	312.46 ± 23.09	0.249
QT dispersion (ms)	65.77 ± 10.59	61.76 ± 12.18	0.133
QTc max (ms)	410.23 ± 15.33	408.27 ± 17.08	0.603
QTc min (ms)	337.86 ± 13.64	339.51 ± 13.34	0.595
QTc dispersion (ms)	71.51 ± 9.83	68.02 ± 13.13	0.200

CONCLUSION

- According to the findings of this study we can claim that QT intervals are beneficial in determining the arrhythmia risk in acromegaly patients and this risk can be reduced after treatment and hormonal control.