Elektrokardiografske promjene i pretilost

Electrocardiographic changes and obesity

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KLJUČNE RIJEČI: pretilost, elektrokardiografske promjene, analiza elektrokardiograma.

KEYWORDS: obesity, electrocardiographic changes, ECG analysis.

CITATION: Cardiol Croat. 2016;11(10-11):529. | **DOI:** <http://dx.doi.org/10.15836/ccar2016.529>

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Uvod: Pretilost je veliki javnozdravstveni problem, čak 13% svjetske populacije je pretilo. Nezavisni je čimbenik za razvoj kardiovaskularnih bolesti, šećerne bolesti, arterijske hipertenzije i hiperkolesterolemije.¹⁻³ Cilj rada bila je analiza određenih elektrokardiografskih parametara kako bi se uvidjela razlika između pretilih osoba i onih normalne tjelesne težine.

Pacijenti i metode: U istraživanje je uključeno je 166 ispitanika, od toga 76 pretilih bolesnika, većinom muškaraca u dobi od 43,23 ± 12,43. Glavni kriterij odabira bio je ITT veći od 30 kg/m². Isključni kriteriji bili su od ranije poznata kardiovaskularna bolest, elektrokardiografske promjene u vidu bloka lijeve ili desne grane, atrijska i/ili ventrikularna ekstrasistolija te od ranije poznata šećerna bolest i arterijska hipertenzija.

Rezultati: Usporednom analizom elektrokardiograma nađeno je četiri statistički značajnih razlika. U pretilih bolesnika električna os zaokrenuta je više u lijevo u odnosu na kontrolnu skupinu (21,64 ± 30,31 vs. 53,62 ± 31,21 stupnjeva, p<0,001). Vrijeme depolarizacije atrija također duže u pretilih temeljem promjene u veličini atrija (P val: 106 ms (62-186 ms) vs. 112 ms (58-162 ms) p=0,01; PQ interval: 159,23 ± 25,07 ms vs. 148,77 ± 24,18 ms, p=0,006). Aplanirani/negativni T valovi prekidajalnih odvoda nađeni su u većem broju kod pretilih osoba; T valovi ekstremitentnih odvoda nađeni su u većem broju kod zdravih ispitanika. QRS, QTc i elevacija ST segmenta nisu se statistički značajno razlikovale između skupina. U istraživanju pretili bolesnici imali su također viši arterijski tlak, odnosno izmjerene su im prosječno za 8 mmHg više vrijednosti sistoličkog i za 10 mmHg više vrijednosti dijastoličkog tlaka (p<0,05).

Zaključak: Minimalne EKG promjene kao što su povećanje atrijske depolarizacije te promjene finalne oscilacije mogle bi se koristiti u pretilih pacijenata kao metoda probira za rano otkrivanje kardioloških promjena te prepoznavanju onih kojima je potrebna daljnja obrada.

Introduction: Obesity is a major public health problem, many as 13% of the world population is obese. It is an independent factor for development of cardiovascular disease, diabetes, hypertension and hypercholesterolemia.¹⁻³ The aim of this study was to analyze certain electrocardiographic parameters in order to realize the difference between obese people and those with normal body weight.

Patients and Methods: The study included 166 patients, of which 76 obese patients, mostly men aged 43.23 ± 12.43. The main selection criterion was the BMI greater than 30kg/m². Exclusion criteria were known history of cardiovascular disease, electrocardiographic changes in the form of a block (left or right branch), atrial and/or ventricular extrasystoles, and previously known diabetes mellitus and arterial hypertension.

Results: A comparative analysis of electrocardiograms found four significant differences. In obese patients electrical axis rotated more to the left than in the control group (21.64 ± 30.31 vs. 53.62 ± 31.21 degrees, p<0.001). Time depolarization of the atrium is also longer in obese based on changes in the size of the atrium (P wave: 106 ms (62-186 ms) vs. 112 ms (58-162 ms) p = 0.01; PQ interval: 159.23 ± 25.07 ms vs. 148.77 ± 24.18 ms, p = 0.006). Flattened / negative T waves of precordial leads were found in greater numbers in obese people; T waves on limb leads were found in greater numbers in healthy subjects. QRS, QTc and ST segment elevation were not significantly different between two groups. The study shows obese patients also have a higher blood pressure, over 8 mmHg systolic and 10 mmHg of diastolic blood pressure values (p<0.05).

Conclusion: Minimum ECG changes such as increasing the atrial depolarization and change of final oscillations could be used in obese patients as a screening method for early detection of cardiac changes and identifying those in need of further processing.

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RECEIVED:
September 25, 2016

ACCEPTED:
October 10, 2016