Utjecaj antropometrijskih čimbenika na širinu distribucije eritrocita kod bolesnika s hemodinamski značajnom stenozom karotidnih arterija

The influence of anthropometric factors on the red blood cells distribution width in patients with hemodynamically significant carotid artery stenosis

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Uvod: Povećana širina distribucije eritrocita (RDW) povezana je s lošom prognozom u bolesnika s kardiovaskularnim (KV) bolestima te je prediktivni čimbenik KV mortaliteta u općoj populaciji. U novije je vrijeme nađena i poveznica između RDW i razvoja šećerne bolesti.¹ **Cilj:** Povećan RDW povezan je s KV i općim mortalitetom kod bolesnika sa zatajivanjem srca, preboljelim infarktom miokarda i moždanim udarom. Ovdje ćemo prikazati rezultate podanalize istraživanja o povezanosti rezistina i ostalim biomarkera ateroskleroze u koje smo uvrstili i RDW s histološkom slikom aterosklerotskog karotidnog plaka s osvrtnom na utjecaj antropometrijskih čimbenika (dob, spol, tjelesna visina, tjelesna masa i opseg struka) na vrijednosti RDW-a.

Pacijenti i metode: U istraživanje je uključeno 78 bolesnika (30 žena) sa značajnom stenozom karotidne arterije kojima je planirana elektivna endarterektomija. Bolesnicima pred zahvat endarterektomije određena vrijednost širine distribucije eritrocita (12,4-18,9, srednja vrijednost 13,589 %) te su utvrđene antropometrijski podatci kako slijedi: dob (45-84; srednja dob 66,83 godine), tjelesna visina (148-187; srednja visina 168,78 cm), tjelesna masa (47-110, srednja masa 80,49 kg), te opseg struka (75-122, srednji opseg 101,27 cm).

Rezultati: Podanalizom podataka utvrđena je statistički značajna pozitivna povezanost RDW-a s opsegom struka ($p=0.0034$).

Zaključak: Ovim smo istraživanjem pokazali pozitivnu korelaciju RDW-a i opsega struka kod svih bolesnika sa hemodinamski značajnom stenozom karotidne arterije neovisno o dobi i spolu. S obzirom kako je povećan RDW povezan s povećanim opsegom struka koji čini čimbenik rizika i za razvoj metaboličkog sindroma što dovodi do postulata kako je moguće upalno zbivanje uzrok pojačanoj destrukciji eritrocita. Određivanje RDW je primjenjivo i jeftino kao i mjerenje opsega struka, a višestruko korisno u određivanju KV mortaliteta.

Introduction: The increased red blood cells distribution width (RDW) is associated with poor prognosis in patients with cardiovascular (CV) disease and it is a predictive factor for cardiovascular mortality in the general population. Recently, the link between the RDW and the development of diabetes was found.¹ **Objective:** The increased RDW is associated with CV and overall mortality in patients with heart failure, myocardial infarction, and stroke. Here we present the results of a subanalysis research of the relationship between resistin and other biomarkers of atherosclerosis, in which we have included the RDW with histology of atherosclerotic carotid plaque with emphasis on the influence of anthropometric factors (age, sex, body height, body weight and waist circumference) on the RDW width.

Patients and Methods: The study included 78 patients (30 women) with significant carotid artery stenosis which were planned for an elective endarterectomy. Blood samples from each patient were taken prior to surgery and RDW was measured (12.4-18.9, mean 13.589%) and anthropometric data were determined as follows: age (45-84; mean age, 66.83 years), body height (148 to 187; mean height 168.78 cm), body weight (47-110, average weight 80.49 kg), and waist circumference (75-122, midrange 101.27cm).

Results: Subanalysis of data showed statistically significant positive correlation between the RDW and waist circumference ($p=0.0034$).

Conclusion: This research showed a positive correlation between RDW and waist circumference for all patients with significant carotid artery stenosis, regardless of age and gender. Positive correlation between RDW and waist circumference which is a risk factor for the development of metabolic syndrome leads to the postulate that the possible inflammatory events might be the cause of increased destruction of red blood cells. Measuring of RDW is applicable and cheap as well as measuring waist circumference which is very useful in determining CV mortality.

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