

Utjecaj anemije na ponovne hospitalizacije bolesnika sa zatajivanjem srca i sistoličkom disfunkcijom lijeve klijetke

The influence of anemia on repeated hospitalization in patients with heart failure and left ventricular systolic dysfunction

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Uvod: U bolesnika s kroničnim zatajivanjem srca (KZS) anemija je česta i može biti posljedica povećanja volumena plazme (hemodilucija) ili smanjenja broja eritrocita (prava anemija). Anemija je u većine bolesnika s KZS tipa kronične bolesti (58%), kao posljedica nedostatka željeza (21%) ili drugih deficita (vitamina B12, folne kiseline, 8%) te drugih uzroka (13%). Neovisno o težini kao i vrsti anemija je povezana s lošijom prognozom. Zadnja istraživanja pokazuju da je u bolesnika s KZS neovisno o anemiji i sam nedostatak željeza nepovoljan prognostički faktor. Korekcija anemije i nedostatka željeza pridonose poboljšanju zdravstvenog stanja čime se smanjuje broj ponovnih hospitalizacija, poboljšava preživljenje i kvaliteta života.¹⁻³

Bolesnici i metode: Ovom retrospektivnom analizom obuhvaćeni su bolesnici s KZS i smanjenom sistoličkom funkcijom lijevog ventrikula koji su zadnje tri godine liječeni u Klinici za bolesti srca i krvnih žila Kliničkog bolničkog centra Sestre milosrdnice u Zagrebu. Metodom usporednog uzorka uspoređeni su podaci 100 bolesnika s anemijom i 100 bolesnika bez anemije te se statističkom analizom više faktora pokušao utvrditi utjecaj anemije kao neovisnog faktora rizika broja ponovnih hospitalizacija.

Rezultati: Iako su bolesnici s anemijom bili stariji od onih bez anemije (medijan 77 (66-85); 67,5 (58-75,3); $p < 0,0001$, Mann-Whitney) utvrđeno je da su bolesnici s KZS i anemijom češće bili ponovno hospitalizirani od onih koji boluju od KZS, ali nisu anemični (medijan 4 (3-6); 2 (1-4); $p < 0,0001$, Mann-Whitney). Također su bolesnici s anemijom češće pregledani u objedinjenom hitnom prijemu (medijan 4 (3-6); 2 (1-4); $p < 0,0001$, Mann-Whitney).

Zaključak: Anemija u bolesnika s KZS predstavlja značajni faktor loše prognoze te može uzrokovati učestalije hospitalizacije i preglede u hitnoj ambulanti. Kako liječenje čak i visokim dozama peroralnog željeza kod tih bolesnika nije dovelo do kliničkog poboljšanja uveden je novi protokol dokazano korisnog liječenja tih bolesnika visokodoznim intravenskim željezom.

Introduction: Anemia is frequent in patients with chronic heart failure (CHF) and is connected to a worse prognosis, regardless the severity and type. The correction of anemia contributes to the improvement of health, which also reduces the number of hospitalizations, improves the survival rate and the quality of life.¹⁻³

Patients and Methods: This retrospective analysis includes patients with CHF and a reduced systolic function of the left ventricle who have been treated for the last three years at the Department of Cardiology University Hospital Centre "Sestre milosrdnice" in Zagreb. The method of parallel sample was used to compare the data of a hundred patients with anemia and a hundred patients without anemia. Using the statistical analysis of multiple factors it was attempted to determine the influence of anemia as an independent risk factor in the number of repeated hospitalizations.

Results: Although patients with anemia were older than those without anemia (median 77 (66-85); 67.5 (58-75.3); $p < 0.0001$, Mann-Whitney), it was determined that patients with CHF and anemia were hospitalized more frequently than those who have CHF without anemia (median 4 (3-6); 2 (1-4); $p < 0.0001$, Mann-Whitney). Patients with anemia were more often examined in the unified urgent reception (median 4 (3-6); 2 (1-4); $p < 0.0001$, Mann-Whitney).

Conclusion: Anemia in patients with CHF represents a significant factor of a bad prognosis and can cause more frequent hospitalizations and examinations in the emergency department. Even treating these patients with high doses of oral iron hasn't led to a clinical improvement, so a new protocol was introduced with a proven and beneficial treatment of these patients with high dose intravenous iron.

LITERATURE

1. Ezekowitz JA, Mc Alister FA, Armstrong PW. Anemia Is Common in Heart Failure and Is Associated With Poor Outcomes Insights From a Cohort of 12 065 Patients With New-Onset Heart Failure. *Circulation.* 2003 Jan 21;107(2):223-5. <https://doi.org/10.1161/01.CIR.0000052622.51963.FC>
2. Lewis GD, Malhotra R, Hernandez AF, McNulty SE, Smith A, Felker GM, et al; NHLBI Heart Failure Clinical Research Network. Effect of Oral Iron Repletion on Exercise Capacity in Patients With Heart Failure With Reduced Ejection Fraction and Iron Deficiency: The IRONOUT HF. *JAMA.* 2017 May 16;317(19):1958-1966. <https://doi.org/10.1001/jama.2017.5427>
3. Anker SD, Kirwan BA, van Veldhuisen DJ, Filippatos G, Comin-Colet J, Ruschitzka F, et al. Effects of ferric carboxymaltose on hospitalisations and mortality rates in iron-deficient heart failure pts. *Eur J Heart Fail.* 2018 Jan;20(1):125-133. <https://doi.org/10.1002/ehf.823>

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