

visok nutritivni rizik opažen je u ¼ bolesnika (27 (26%) bolesnika).

**Zaključak:** Procjena nutritivnog statusa bolesnika oboljelih od raka debelog crijeva odgovarajućim alatima, trebala bi biti dio svakodnevne liječničke prakse kako bi se bolesnicima osigurala odgovarajuća potporna skrb te poboljšao ishod liječenja i preživljenje oboljelih od raka debelog crijeva.

## ASSESSMENT OF NUTRITIONAL STATUS OF PATIENTS THAT BEGAN SYSTEMIC THERAPY OF COLORECTAL CANCER AT THE UNIVERSITY HOSPITAL FOR TUMORS

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### Abstract

**Introduction:** Obesity, measured by body mass index (BMI) of 30 kg/m<sup>2</sup> or more, is established risk factor for the development of colorectal cancer. Unintentional body weight loss is one of the symptoms of colorectal cancer and unrecognized may lead to cachexia, associated with a poor outcomes of systemic antineoplastic therapy and patients poor quality of life.

**Aim:** The aim of this paper is to evaluate nutritional status of patients that began systemic therapy of colorectal cancer at the Department of Oncology, University Hospital for Tumors using the nutritional screening tool NRS 2002.

**Methods:** Retrospectively we analysed nutritional status of 175 patients that began systemic therapy of colorectal cancer from May 2016 until May 2018. Low nutritional risk was defined as NRS 2002 score of 0-2 and high nutritional risk as NRS 2002 score of 3 or more. There were 106 men and 71 women, median age of 62 years.

**Results:** Majority of patients that began systemic therapy of colorectal cancer in analyzed period had low nutritional risk, 122 (70%) patients. High nutritional risk was observed in 53 (30%) patients, in 11 (37%) patients with early colorectal cancer and 42 (29%) patients with metastatic colorectal cancer. Majority of patients were overweight (BMI > 25 kg/m<sup>2</sup>) and in ¼ of these patients (27 (26%) patients) high nutritional risk was observed.

**Conclusion:** Assessment of nutritional status of colorectal cancer patients using appropriate nutritional screening tool should be implemented in medical practice in order to provide adequate supportive care and therefore improve therapeutic and survival outcomes of colorectal cancer patients.

## POČETNI ERITROPOETIČKI PARAMETRI KOJI PREDVIĐAJU POVEĆANJE RETIKULOCITA U NIŽOJ ILI UMJERENOJ VISINSKOJ AEROBNOJ AKTIVNOSTI

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### Sažetak

**Uvod:** Visoka nadmorska visina i njen utjecaj na ljudski organizam je vrlo istraživano područje, a adaptacijski odgovori osoba su individualni. Utjecaj visine do 2000m nije toliko detaljno istraživano, iako je to uobičajena visina na kojima rekreativna populacija provodi svoj aktivan odmor te bi od tog odmora mogla možda imati neke koristi vezane uz krvnu sliku. I za sportaše i za rekreativce bi bilo od velikog značaja unaprijed znati da li će osoba odgovoriti s pozitivnim učincima boravka na visini kako se sredstva ne bi trošila nepotrebno. Stoga je Cilj ovog istraživanja bio procijeniti prediktivnu moć inicijalnih stanja feritina, eritrocita i eritropoetina na relativni porast retikulocita.

**Metode:** Eksperimentalna skupina (N=17) je boravila 10 dana na skijaškom odmoru. Spavali su na 1250m nadmorske visine i svaki dan provodili 5-6 sati aerobne aktivnosti (skijanje) na visini do 2000m. Izmjerene su inicijalne i finalne vrijednosti feritina, retikulocita, eritrocita i eritropoetina.

**Rezultati:** Model multiple regresije je mogao objasniti 27% promjene u retikulocitima (R=0,522; R<sup>2</sup>=0,273; Adjusted R<sup>2</sup>=0,105; F(3,13)=1,627; p<0,231; Std. Error of Estimate: 2,106), a između mjerenih prediktora pokazalo se da značajnu i najveću moć ima inicijalna koncentracija eritropoetina. Naime, inicijalno niža koncentracija eritropoetina je rezultirala većim relativnim porastom broja retikulocita (b\* = 0.65; Std. Err of b\* = 0.300; p<0.05). Inicijalne vrijednosti feritina nisu se pokazale kao dobar prediktor odgovora retikulocita, dok su inicijalne vrijed-

nosti eritrocita nešto bolje objašnjavale porast retikulocita od feritina, no to nije bilo statistički značajno.

**Zaključak:** Zaključno, osobe s nižim vrijednostima eritropoetina su imale jači odgovor u smislu porasta retikulocita nakon boravka i aktivnostima nižim do umjerenim visinama. To ukazuje na moguće koristi u smislu barem kratkoročnog poboljšanja sustava za transport kisika populacije koja svoje odmore provodi aktivno i na planini.

**Ključne riječi:** eritropoetin, retikulociti, nadmorska visina, aerobna aktivnost, feritin

### INITIAL ERYTHROPOIETIC PARAMETERS PREDICTING RETICULOCYTE INCREASE IN LOWER TO MODERATE ALTITUDE AEROBIC ACTIVITY

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#### Abstract

**Introduction:** Although high altitude and its benefits on human physiology is vastly studied area, it is still often seen that the responses are strongly individual. The altitudes up to 2000m had not been thoroughly investigated, although those are usual altitudes on which recreational population will spend their active holidays and might get some hematological benefits. It would be of great importance in athletes as well as in general population to know beforehand who could get the greatest improvements in red blood cell parameters (RBC) after the return to sea level. The aim of the study was to search for predictive power of initial ferritin levels, erythrocyte counts and erythropoietin concentration in relative reticulocyte increase.

**Methods:** The experimental group (N=17) underwent an intervention, a typical 10-day ski-trip. They slept at on 1250 m and performed 5-6 hours of aerobic activity (skiing) at 1250-2000m altitude. The initial and final (before and after the trip) ferritin levels, reticulocyte count, red blood cell count and erythropoietin were measured.

**Results:** The whole multiple regression model could explain 27% of the reticulocyte change ( $R=0,522$ ;  $R^2=0,273$ ; Adjusted  $R^2=0,105$ ;  $F(3,13)=1,627$ ;  $p<0,231$ ; Std. Error of Estimate: 2,106) and showed that a variable in model which had the strongest predictive power was initial erythropoietin concentration. There was a significant negative relationship between initial erythropoietin count and the relative reticulocyte increase ( $b^* = 0.65$ ; Std. Err of  $b^*= 0.300$ ;  $p<0.05$ ). The initial ferritin reserves were not a good predictor of reticulocyte response. The initial erythrocyte count could explain the reticulocyte increase a bit better but that predictive power was not statistically significant.

**Conclusion:** In Conclusion, the ones with lower initial erythropoietin concentration had stronger reticulocyte response, and it could be seen even on lower to moderate altitude. This might implicit possible RBC benefits for general population, who spend their winter holidays actively.

**Keywords:** erythropoietin, reticulocyte, high altitude, aerobic activity, ferritin

### POST KAO DUHOVNA DIJETA

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#### Sažetak

**Uvod:** Post predstavlja suzdržavanje od hrane i pića određeni dio vremena. Tu može biti riječ o "ukidanju" određenih vrsta hrane na neko određeno vrijeme ili apsolutno suzdržavanje od hrane i pića jedan cijeli dan ili čak nekoliko dana. Post ima veliku religioznu važnost (za različite vjernike), ali je važan i za zdravlje, ako ga se provodi pravilno. Duhovna kondicija /duhovna spremnost-duhovna spremnina nije duhovno stanje *per se* već ono uveliko ovisi o primjeni razumijevanja naše tjelesne spremnosti na duhovnu dimenziju.

**Cilj:** Cilj ovog osvrta predmnijeva da bi se post mogao shvatiti i stanovitom vrstom duhovne dijete pače i određenom vrstom «duhovne tablete».