J Med Biochem 2012; 31 (1) DOI: 10.2478/v10011-011-0043-1

UDK 577.1 : 61 **ISSN 1452-8258**

J Med Biochem 31: 60–64, 2012

Original paper
Originalni naučni rad

THROMBOCYTE AND ERYTHROCYTE INDICES IN SEPSIS AND DISSEMINATED INTRAVASCULAR COAGULATION

TROMBOCITNI I ERITROCITNI INDEKSI U SEPSI I DISEMINOVANOJ INTRAVASKULARNOJ KOAGULACIJI

Serefden Acikgoz[1], Deniz Akduman[2], Zeynep M. Eskici[1], Murat Can[1], Gorkem Mungan[1], Berrak Guven[1], Füsun Comert[3], Vildan Sumbuloglu[4]

[1]Department of Biochemistry,
[2]Department of Infectious Diseases,
[3]Department of Microbiology,
[4]Department of Biostatistics,
Faculty of Medicine Zonguldak Karaelmas University, Turkey

Summary: Sepsis is the inflammatory response against infection. The existence of DIC during sepsis indicates a poor prognosis and coagulation abnormalities and thrombocytopenia may exist. The aim of this study was to investigate platelet and erythrocyte indices in sepsis patients with DIC and without DIC. In both groups coagulation tests, platelet count and indices, erythrocyte count and indices were retrospectively analysed. In the sepsis plus DIC patients the prothrombin time and D-dimer values were found significantly higher and fibrinogen, platelet and plateletcrit were found significantly lower than in the sepsis without DIC group. The analysis of mean platelet volume, platelet distribution width, erythrocyte count and indices revealed no significant differences between the two groups. These results showed us that the depression of bone marrow in septic patients with DIC and without DIC did not differ. The activation of the coagulation system might probably be the cause of thrombocyte depletion in DIC.

Keywords: sepsis, disseminated intravascular coagulation, platelet (thrombocyte) count, platelet (thrombocyte) indices, erythrocyte indices

Kratak sadržaj: Sepsa predstavlja inflamatorni odgovor na infekciju. Prisustvo diseminovane intravaskularne koagulacije (DIK) tokom sepse ukazuje na lošu prognozu, a mogu se javiti i poremećaji u koagulaciji i trombocitopenija. Cilj ove studije bio je da se ispitaju trombocitni i eritrocitni indeksi kod pacijenata sa sepsom i DIK, odnosno sepsom bez DIK. U obe grupe retrospektivno su analizirani testovi koagulacije, broj i indeks trombocita i broj i indeks eritrocita. Kod pacijenata sa sepsom i DIK, protrombinsko vreme i vrednosti D-dimera bili su značajno povišeni, dok su fibrinogen, trombociti i trombocitokrit bili značajno niži nego u grupi sa sepsom bez DIK. Prilikom analize srednje zapremine trombocita, širine distribucije trombocita i broja i indeksa eritrocita nisu otkrivene značajne razlike između dve grupe. Ovakvi rezultati ukazuju na to da kod pacijenata sa sepsom i DIK i pacijenata sa sepsom bez DIK nema razlika u depresiji koštane srži. Aktivacija koagulacijskog sistema predstavlja mogući uzrok manjka trombocita u DIK.

Ključne reči: sepsa, diseminovana intravaskularna koagulacija, broj trombocita, trombocitni indeksi, eritrocitni indeksi

Address for correspondence:

Serefden Acikgoz, MD
Associate Professor of Biochemistry
Department of Biochemistry
Zonguldak Karaelmas University
Faculty of Medicine
67600 Esenköy-Kozlu-Zonguldak, Turkey
Tel: +90-0372-2612002/3233
Fax:+90 -0372-2610264
e-mail: serefdenacikgoz@yahoo.com

Introduction

Disseminated intravascular coagulation (DIC) is a thrombohemorrhagic disorder secondary to an underlying clinical condition (1). This is a frequent complication among patients in the intensive care unit and has a high rate of mortality (2). DIC might emerge in patients with sepsis, malignity, trauma, hepatocellular disorders, vascular abnormalities, placental