ORIGINAL RESEARCH

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Could Asymmetric Dimethylarginine Have a Role in COVID-19 Cases?

Asimetrik Dimetilarjininin COVID-19'daki Rolü

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Abstract

Objective: Coronavirus disease-2019 (COVID-19) is a disease with respiratory involvement and the virus-induced endothelial dysfunction is pronounced in the clinical course. In COVID-19 patients, to analyze the laboratory findings and the associations may help to better understand the pathophysiology of this disease.

Method: We analyzed the laboratory markers including white blood cell, platelet, mean platelet volume, red cell distribution width (RDW), lactate dehydrogenase, procalcitonin, arterial blood gas values and asymmetric dimethylarginine (ADMA) levels of 83 hospitalized COVID-19 patients with pneumonia. Thirty healthy individuals were enrolled as a control group and their laboratory findings were compared.

Results: No significant difference of ADMA levels (median value 225.6 μg/L vs 225.6 μg/L) was noted between COVID-19 patients and the control group (p=0.771). ADMA had an inverse correlation with RDW (r=-0.391, p<0.001). C-reactive protein (CRP) was the significant variable when patients were compared to the healthy group (p=0.002).

Conclusion: ADMA levels do not increase at the beginning of COVID-19 clinical course. CRP, as an established inflammation marker, has an imperative role in the clinical spectrum of this coronavirus infection.

Keywords: ADMA, COVID-19, infection

Öz

Amaç: Koronavirüs hastalığı-2019 (COVID-19) solunum tutulumu olan bir hastalıktır ve virüs kaynaklı endotelyal disfonksiyon klinik seyirde belirgindir. COVID-19 hastalarında laboratuvar bulgularının ve birlikteliklerin analiz edilmesi bu hastalığın patofizyolojisinin daha iyi anlaşılmasına yardımcı olabilir.

Yöntem: Hastaneye yatırılan 83 pnömonili COVID-19 hastasının beyaz kan hücresi, trombosit, ortalama trombosit hacmi, kırmızı hücre dağıtım genişliği (RDW), laktat dehidrogenaz, prokalsitonin, arter kan gazı değerleri ve asimetrik dimetilarginin (ADMA) düzeylerini içeren laboratuvar belirteçleri incelendi. Kontrol grubu olarak 30 sağlıklı kişi alındı ve laboratuvar bulguları karşılaştırıldı.

Bulgular: COVID-19 hastaları ve kontrol grubu arasında ADMA seviyelerinde (ortanca değer 225,6 μg/L'ye karşı 225,6 μg/L'ye karşı) anlamlı bir fark görülmedi (p=0,771). ADMA, RDW ile ters bir korelasyona sahipti (r=-0,391, p<0,001). Hastalar sağlıklı grupla karşılaştırıldığında C-reaktif protein (CRP) anlamlı bir değişkendi (p=0,002).

Sonuç: ADMA seviyeleri COVID-19 klinik seyrinin başlangıcında artmamaktadır. Yerleşik bir enflamasyon belirteci olarak CRP, bu koronavirüs enfeksiyonunun klinik spektrumunda zorunlu bir role sahiptir.

Anahtar kelimeler: ADMA, COVID-19, enfeksiyon

Introduction

Coronavirus disease-2019 (COVID-19) has been a global challenge since 2019. The World Health Organization (WHO) declared it as a pandemic in early 2020 (1). It is caused by severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) and it has a variable clinical course from asymptomatic patients or mild respiratory symptoms to critical illness and death. Despite the extensive vaccination campaigns, third and fourth waves of the disease are challenging for the World. SARS-CoV-2 infects the host

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