The Prognostic Value of Neutrophil-Lymphocyte Ratio in Acute Pancreatitis is Controversial

Emine Binnetoğlu · Erdem Akbal · Fahri Güneş ·
Hacer Şen

Received: 18 July 2013 / Accepted: 9 December 2013 / Published online: 7 January 2014
© 2013 The Society for Surgery of the Alimentary Tract

Dear Editor,

I read with great pleasure and interest Suppaih and colleagues' article "The prognostic value of the neutrophil-lymphocyte ratio (NLR) in acute pancreatitis: identification of an optimal NLR." NLR provides a rapid indication of the extent of an inflammatory process. So recently, there are a lot of studies about NLR and its relationship with other diseases.

In this study, they showed that NLR was increased during the first 48 h of admission of the patient with acute pancreatitis (AP), and they suggested NLR as an independent negative prognostic indicator in AP. But when we examined the study, we could not find any information about the treatment with antibiotics, especially in patients with severe acute pancreatitis (SAP).

As you well know, broad-spectrum antibiotics with good tissue penetration are necessary to prevent infection in SAP. Carbapenems, quinolones, and third-generation cephalosporins are generally used. Manes et al. compared the early antibiotic treatment with the treatment started after the demonstration of pancreatic necrosis. At the end of the study, they suggested that early antibiotic treatment is associated with a significant improvement in the prognosis of necrotizing AP.¹ But if they had used antibiotics, they would have found a different result because antibiotics can affect leukocyte counts by reducing the inflammatory process. Imajo et al. evaluated the efficacy and safety of meropenem in patients with febrile neutropenia and showed that meropenem have many side

effects, one of them is lymphocyte deformation.² Petit et al. showed that imipenem induces lymphocyte transformation.³ Cornacchione et al. evaluated the effect of meropenem and imipenem on PMN and natural killer cells and determined that both antibiotics can reduce PMN function, but they do not affect natural killer.⁴

Consequently, I think the prognostic value of NLR in AP is controversial.

References

1. Manes G, Uomo I, Menchise A, Rabitti PG, Ferrara EC, Uomo G. Timing of antibiotic prophylaxis in acute pancreatitis: a controlled randomized study with meropenem. *Am J Gastroenterol*. 2006 Jun;101(6):1348-53.
2. Imajo K, Ueda Y, Kawano F, Sao H, Kamimura T, Ito Y, Mugitani A, Suzuki K, Uike N, Miyamura K, Uski K, Morimatsu Y, Akiyama N, Nagai H, Ohara A, Tanimoto M, Takaki K, Chayama K, Urabe M, Nagatoshi Y, Tamura K. A phase III study of the efficacy and safety of meropenem in patients with febrile neutropenia. *Jpn J Antibiot*. 2012 Aug;65(4):271-87.
3. Petit JC, Burghoffer B, Richard G, Daguet GL. Effect of imipenem (N-formimidoyl-thienamycin) on the in-vitro lymphocyte proliferation. *J Antimicrob Chemother*. 1987 Dec;20(6):871-4.
4. Cornacchione P, Scaringi L, Capodicasa E, Fettucciari K, Rosati E, Sabatini R, Benedetti C, Marconi P, Rossi R, Del Favero A. In vitro effects of meropenem and imipenem/cilastatin on some functions of human natural effector cells. *Chemotherapy*. 2000 Mar-Apr;46(2):135-42.

E. Binnetoğlu (✉) · E. Akbal · F. Güneş · H. Şen
School of Medicine, Çanakkale Onsekiz Mart University,
Çanakkale, Turkey
e-mail: edemirbas1@yahoo.com