[2013] [THU0442] SERUM PREPSEPSIN (SOLUBLE CD14-SUBTYPE) AS A NOVEL USEFUL BIOMAKER FOR INFECTION IN PATIENTS WITH RHEUMATOID ARTHRITIS (RA)

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Background: Infection is one of the serious complications seen in the management of RA patients. The acute inflammatory marker C-reactive protein (CRP) is elevated both during infection and during high disease activity of RA, and this often poses a problem when distinguishing the two. The soluble CD14 subtype, presepsin has been reported to be a novel effective marker for the diagnosis of sepsis but has not been evaluated in RA patients.

Objectives: To evaluate the use of presepsin in RA patients during an infectious event.
Methods: 25 RA patients with infections, 21 RA patients with high disease activity, 23 healthy controls (HC) were enrolled in this study.

RA patients in whom the pathogens were identified (22 bacterias, 2 viruses, and 1 M. tuberculosis) were designated as the infection RA group (iRA), high disease activity RA patients without infection were designated as the flare RA group (fRA).

Presepsin was measured using a chemiluminescent enzyme immunoassay. CRP and procalcitonin (PCT) were also measured. RA disease activity was evaluated using DAS28-CRP. Levels of respective measurements at both pre- and post-treatment were analyzed using the Wilcoxon signed-rank test, and comparisons of levels within each group were analyzed using the Mann-Whitney's U-test. Additionally, Spearman's rank correlation coefficient was used to analyze the correlation of levels of presepsin, CRP, and PCT in iRA and correlation of presepsin, DAS28-CRP, and CRP in fRA. Further, AUC was obtained from the ROC analysis. Treatment for iRA included antibiotics, antivirals, and treatment for fRA included corticosteroids, DMARDs, and biologics.

Results: In fRA, average level of CRP was 2.4±2.1mg/dl, DAS28-CRP was 4.2±1.31.

At pre-treatment, levels of presepsin in iRA (2088.4±4243.7pg/ml) was significantly higher compared to in fRA (319.3±321.8pg/ml, $p<0.01$). Both levels were significantly higher compared to those in HC (136±57.0pg/ml).

In iRA, presepsin level correlated with CRP ($r=0.65$, $p<0.01$) and PCT ($r=0.48$, $p<0.05$). In fRA, presepsin level did not correlate with CRP or DAS28-CRP.

After treatment, levels of prepsin ($p<0.001$), CRP ($p<0.001$), and PCT ($p<0.001$) were significant decreased in iRA. On the other hand, in fRA, CRP ($p<0.001$) and DAS28-CRP ($p<0.001$) were significantly decreased after treatment, however presepsin level showed no significant change ($p=0.37$). Furthermore, presepsin levels in fRA with low disase activity after treatment were significantly higher compared to those in HC ($p<0.01$). ROC analysis of iRA showed that AUC levels for presepsin was 0.817, indicating the efficacy of presepsin for diagnosis of infection in RA.

Conclusions: Presepsin is an effective diagnostic marker for infection in RA patients.

References:
[1] Y. Yaegashi, et al., J Infect Chemother 2005;11:234-238
[2] T. Shozushima, et al., J Infect Chemother 2011;17:764-769
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