Korelasi nerve growth factor dan aktivitas penyakit pada pasien artritis reumatoid = Correlation between serum concentration of nerve growth factor with disease activity in patients with rheumatoid arthritis

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Abstrak

ABSTRAK
Latar Belakang: Aktivitas penyakit Artritis Reumatoid (AR) merupakan ekspresi dari kaskade inflamasi. Inflamasi jaringan sinovium yang disertai pembentukan pannus memerlukan asupan nutrisi dan oksigen melalui angiogenesis. Peningkatan penanda angiogenik menunjukkan inflamasi sendi yang progresif dan peningkatan aktivitas penyakit. Salah satu faktor pertumbuhan yang memiliki peran pada angiogenesis adalah nerve growth factor (NGF). Beberapa penelitian terdahulu mendapatkan kadar NGF yang meningkat baik pada serum maupun pada cairan sinovium pasien AR. Nerve growth factor (NGF) dapat menginduksi faktor-faktor pro-angiogenik dan faktor pertumbuhan lain yang berperan pada AR. Saat ini belum ada penelitian yang menghubungkan kadar serum NGF terhadap aktivitas penyakit AR.

Tujuan: Mengetahui korelasi antara kadar NGF dengan aktivitas penyakit (yang dinilai dengan DAS28 LED dan DAS28 CRP) pada pasien AR di Rumah Sakit Cipto Mangunkusumo.

Metode: Penelitian potong lintang yang mengevaluasi kadar NGF menggunakan two site immunoenzymatic assay (ELISA) pada 50 pasien (47 orang perempuan dan 3 orang laki-laki) AR di poliklinik Reumatologi Rumah Sakit Cipto Mangunkusumo pada Oktober sampai Desember 2015. Aktivitas penyakit AR pada penelitian ini dinilai menggunakan skor DAS28 LED dan DAS28 CRP melalui kalkulator yang diakses dari internet pada http://www.das-score.nl/. Analisis statistik bivariat digunakan untuk mendapatkan korelasi antara NGF dengan aktivitas penyakit AR.

Hasil: Rerata usia subjek penelitian ini adalah 43,44 tahun. Median kadar serum NGF adalah 4,33 pg/mL (2,35-20,83). Hasil analisis memperlihatkan korelasi antara kadar serum NGF dengan skor DAS28 LED (r = +0,427; p = 0,002) dan DAS28 CRP (r =+0.407; p = 0,003).

Kesimpulan: Terdapat korelasi positif sedang antara kadar serum NGF dengan aktivitas penyakit AR.
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ABSTRACT
Background: Disease activity of Rheumatoid Arthritis (RA) is an expression of the inflammatory cascade. Disease activity of a given joint is correlated with the synovial vascularization. Synovial tissue inflammation accompanied by pannus formation requires intake of nutrients and oxygen through angiogenesis. Angiogenesis plays an integral part of the development of the pannus formation. Increased angiogenic markers shows a progressive increase of joint inflammation and disease activity. One of the contributing factors to angiogenesis is the nerve growth factor (NGF). Several previous studies show increased NGF concentrations in both the serum and synovial fluid of RA. Nerve growth factor can induce pro-angiogenic factors and other growth factors contribute in RA. Currently, there has not been any studies yet that correlates the NGF serum concentration with RA disease activity.

Objective: To determine the correlation between the serum concentration of NGF and disease activity of RA patients at Cipto Mangunkusumo General Hospital (using DAS28 ESR and DAS28 CRP score).

Methods: A cross-sectional study was used. Recruited were 50 RA patients (47 women and 3 men) of outpatient clinic of Rheumatology at Cipto Mangunkusumo General Hospital from October to December 2015. Concentrations of NGF were evaluated with a two site immunoenzymatic assay (ELISA). Disease activity in this study was assessed using DAS28 ESR and DAS28 CRP score using a calculator accessible from the internet on http://www.das-score.nl/. The correlation between NGF with disease activity was analyzed by bivariate analysis.

Results: The mean age of the study subjects was 43.44 years. Median serum NGF was 4.33 pg / mL (2.35 to 20.83). The results shows correlation between serum NGF with DAS28 ESR (r = +0.427; p = 0.002) and DAS28 CRP (r = + 0407; p = 0.003).

Conclusion: Significant positive correlation between serum concentration of NGF with diesease activity in patient with AR was found.