

Korelasi kadar matriks metalloproteinase-9 dengan derajat kontrol pasien asma di RSUP Persahabatan = Correlation between matrix metalloproteinase-9 levels with the degree of asthma control patients at Persahabatan Hospital

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Abstrak

Latar Belakang: Asma telah menjadi masalah kesehatan masyarakat di berbagai negara. Kekambuhan asma melibatkan banyak sel yang berperan dalam proses reaksi peradangan kronik terutama sel mast, eosinofil, limfosit T, makrofag, neutrofil dan sel epitel. Peradangan yang terus menerus pada saluran napas dapat menyebabkan proses remodeling pada asma. Mekanisme remodeling disebabkan ketidakseimbangan produksi matriks ekstraselular dan degradasi kolagen. Penelitian ini bertujuan untuk melihat korelasi kadar matriks metalloproteinase-9 dengan derajat kontrol pada pasien asma.

Metode: Penelitian ini merupakan penelitian potong lintang yang dilakukan Poliklinik Asma RS Persahabatan dari April-Desember 2023. Subjek penelitian adalah pasien asma yang berkunjung ke Poliklinik Asma dan memenuhi kriteria penelitian. Subjek penelitian dilakukan anamnesis, pemeriksaan MMP-9, hitung jenis neutrofil sputum, hitung jenis eosinofil sputum, pengukuran FeNO dan asthma control test (ACT).

Hasil: Pada penelitian ini didapatkan 40 subjek penelitian. Nilai median MMP-9 pada pasien asma 0,74 ng/ml (0,33-17,82 ng/ml). Nilai median hitung jenis eosinofil sputum 3% (0-92%). Nilai rerata hitung jenis neutrofil sputum 59,62% 31,34%. Nilai median FeNO 67 ppb (13-184 ppb), rerata skor ACT 16,37 5,67. Terdapat perbedaan bermakna rerata kadar MMP-9 berdasarkan derajat kontrol pasien asma ($p < 0,03$). Terdapat perbedaan bermakna rerata hitung jenis neutrofil berdasarkan derajat kontrol pasien asma ($p < 0,029$). Terdapat perbedaan bermakna rerata nilai FeNO berdasarkan derajat kontrol pasien asma ($p < 0,001$). Terdapat korelasi bermakna kadar MMP-9 dengan skor ACT pada pasien asma ($r = -0,32$, $p < 0,047$).

Kesimpulan: Terdapat korelasi negatif kadar MMP-9 dengan skor ACT pada pasien asma.

.....Background: Asthma has become a public health problem in various countries. Asthma recurrence involves many cells that play a role in the chronic inflammatory reaction process, especially mast cells, eosinophils, T lymphocytes, macrophages, neutrophils and epithelial cells. Continuous inflammation of the airways can cause a remodeling process in asthma. The remodeling mechanism is caused by an imbalance in extracellular matrix production and collagen degradation. The aim of this study was to know the correlation between matrix metalloproteinase-9 levels and the degree of asthma control patients.

Methods: This is a cross-sectional study conducted by the Asthma Polyclinic at Persahabatan Hospital from April-December 2023. The research subjects were asthma patients who visited the Asthma Polyclinic and met the inclusion criteria. The research subjects underwent anamnesis, MMP-9 examination, sputum neutrophil count, sputum eosinophil count, FeNO measurement and asthma control test (ACT).

Results: In this study, there were 40 research subjects. The median MMP-9 value in asthma patients was 0.74×10^2 ng/ml (0.33-17.82 ng/ml). The median value of sputum eosinophil count was 3% (0-92%). The mean value of sputum neutrophil count was 59.62% 31.34%. Median FeNO value 67 ppb (13-184 ppb),

mean ACT score 16.37 5.67. There was a significant difference in mean MMP-9 levels based on the degree of control of asthma patients ($p < 0.03$). There was a significant difference in the mean count of neutrophil types based on the degree of control of asthma patients ($p < 0.029$). There was a significant difference in the mean FeNO value based on the degree of control of asthma patients ($p < 0.001$). There was a significant correlation between MMP-9 levels and ACT scores in asthma patients ($r = -0.32$, $p < 0.047$).

Conclusion: There is a negative correlation between MMP-9 levels and ACT scores in asthma patients.