ABSTRAK

HUBUNGAN ANTARA KADAR SERUM MATRIKS METALLOPROTEINASE-9 TERHADAP FUNGSI PARU DAN RADIOGRAFI TORAKS PASIEN PASCA TUBERKULOSIS DI KOTA BANDAR LAMPUNG TAHUN 2023

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Matriks metalloproteinase merupakan enzim protease yang berperan pada kerusakan jaringan paru pasien pasca TB sehingga menimbulkan keluhan pernapasan jangka Panjang. Penelitian ini bertujuan untuk mengetahuai hubungan antara kadar serum MMP-9 terhadap fungsi paru dan radiografi toraks pasien pasca tuberkulosis di Bandar Lampung tahun 2023.

Desain penelitian ini adalah analisis observasional dengan rancangan *case control study*. Sampel adalah 35 pasien TB yang telah menyelesaikan OAT dan 35 orang sehat. Kadar MMP-9 diukur menggunakan metode ELISA, Fungsi paru diukur menggunakan alat spirometri, sedangkan radiografi toraks dinilai dari kelainan paru berupa Kavitas, atelectasis, fibrosis, dan bronkiektasis. Data dianalisis menggunakan uji beda *mann whitney* dan korelasi *spearman rho.*

Penelitian ini menunjukkan bahwa kadar MMP-9 pasien pasca TB lebih tinggi dari kontrol sehat (1137.7 ± 527.4 vs 939.5 ± 360.1). Terdapat perbedaan radiografi toraks ($p<0,005$) dan fungsi paru ($p<0,005$) yang bermakna antara kontrol sehat dengan pasca TB. MMP-9 memiliki korelasi bermakna dengan fungsi paru yaitu VEP1 ($p=0,034$; $r=0,254$), VEP1/KVP post BD ($p=0,027$; $r=,0,265$) dan radiografi toraks yaitu kavitas ($p=0,027$; $r=0,266$) dan atelektasis ($p=0,026$; $r=0,266$).

Terdapat hubungan antara kadar serum matriks metalloproteinase-9 terhadap fungsi paru dan radiografi toraks pasien pasca tuberkulosis di kota bandar lampung tahun 2023.

Kata Kunci : Gejala sisa pasca tuberkulosis, MMP-9, Fungsi paru, Radiografi toraks

ABSTRACT

THE RELATIONSHIP BETWEEN SERUM MATRIX METALLOPROTEINASE-9 LEVELS AND PULMONARY FUNCTION AND CHEST RADIOGRAPHY IN POST-TUBERCULOSIS PATIENTS IN BANDAR LAMPUNG, 2023

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Matrix metalloproteinases (MMPs) are proteolytic enzymes involved in tissue remodeling and have been implicated in post-tuberculosis (post-TB) lung damage, potentially contributing to long-term respiratory symptoms. This study aimed to investigate the association between serum MMP-9 levels and pulmonary function as well as chest radiographic findings in post-TB patients in Bandar Lampung in 2023.

This was an observational analytic study using a case-control design. The study involved 35 post-TB patients who had completed anti-tuberculosis treatment and 35 healthy controls. Serum MMP-9 levels were measured using the ELISA method. Pulmonary function was assessed by spirometry, while chest radiographs were evaluated for abnormalities such as cavities, atelectasis, fibrosis, and bronchiectasis. Data were analyzed using the Mann–Whitney U test and Spearman's rho correlation.

Post-TB patients had significantly higher MMP-9 levels compared to healthy controls (1137.7 ± 527.4 vs 939.5 ± 360.1). Significant differences were observed in both chest radiographic findings ($p < 0.005$) and pulmonary function ($p < 0.005$) between the two groups. MMP-9 levels showed a significant correlation with pulmonary function parameters, namely FEV_1 ($p = 0.034$; $r = 0.254$) and FEV_1/FVC post-bronchodilator ($p = 0.027$; $r = 0.265$), as well as with radiographic findings of cavities ($p = 0.027$; $r = 0.266$) and atelectasis ($p = 0.026$; $r = 0.266$).

There is a significant association between serum matrix metalloproteinase-9 levels and both pulmonary function and chest radiographic abnormalities in post-tuberculosis patients in Bandar Lampung in 2023.

Keywords : Post Tuberculosis lung disease, MMP-9, Lung function, Chest radiograph