

Hubungan fraksi dan rasio CD4/CD8 cairan bronchoalveolar lavage terhadap status ekstubasi dan status mortalitas pada pasien pneumonia berat di RSUPN Dr. Cipto Mangunkusumo = Association between fraction and ratio of CD4/CD8 bronchoalveolar lavage fluid toward extubation status and mortality status of pneumonia severe patient in Dr. Cipto Mangunkusumo National General Hospital, Indonesia

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Abstrak

Latar Belakang: Kegagalan ekstubasi akibat pneumonia berat meningkatkan morbiditas dan mortalitas. Imunitas adaptif sistemik berupa fraksi dan rasio sel T limfosit CD4/CD8 darah memiliki peranan penting sebagai prediktor lemah mortalitas. Dibutuhkan studi lanjutan untuk mengetahui imunitas adaptif lokal melalui Bronchoalveolar Lavage (BAL) pada kedua paru.

Tujuan: Mengetahui perbedaan kadar dan rasio sel T limfosit CD4/CD8 Bronchoalveolar Lavage sesuai status ekstubasi dan status mortalitas pada pneumonia berat.

Metode: Penelitian ini menggunakan desain kohort prospektif pada 40 pasien pneumonia berat. Data primer diambil dari pasien yang terintubasi dan menjalani tindakan bronkoskopi di perawatan IGD dan ruang intensif RSCM sejak November 2020 hingga Januari 2021. Analisa univariat dan bivariat dengan uji beda rerata digunakan pada data skala numerik dengan sebaran normal dan uji Mann Whitney dengan sebaran tidak normal.

Hasil: Proporsi gagal ekstubasi sebesar 80% dan proporsi mortalitas sebesar 75%. Terdapat perbedaan bermakna pada fraksi sel T limfosit CD4 BAL pada paru cedera berat kelompok berhasil ekstubasi dan gagal ekstubasi ($p=0,006$); kelompok pasien hidup dan meninggal ($p=0,002$). Fraksi CD4 darah dan rasio CD4/CD8 darah ditemukan lebih tinggi secara bermakna pada kelompok berhasil ekstubasi dibandingkan dengan gagal ekstubasi; juga ditemukan lebih tinggi pada kelompok yang hidup dibandingkan yang meninggal.

Kesimpulan: Fraksi CD4 BAL pada paru cedera berat berbeda secara statistik bermakna lebih tinggi pada kelompok pasien berhasil ekstubasi dibandingkan dengan kelompok pasien gagal ekstubasi dan kelompok pasien hidup dibandingkan dengan kelompok pasien meninggal.

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Background: Extubation failure due to severe pneumonia increases morbidity and mortality. Systemic adaptive immunity, T lymphocyte cells CD4/CD8 in blood, has special role as a mortality predictor in severe pneumonia. Further study still needed to evaluate local adaptive immunity through bronchoalveolar lavage cellular examination in both lung.

Objective: The aim of this study was to find out the differences between T lymphocytes CD4/CD8 in both lung based on extubation status and mortality status.

Methods: We performed a cohort prospective study of 40 patients with severe pneumonia whom underwent endotracheal intubation and bronchoscopy hospitalized in intensive care unit between November 2020 to January 2021 in Dr. Cipto Mangunkusumo National General Hospital. Primary data was taken and analyzed using univariate and bivariate to investigate mean or median differences with unpaired t-test for normal

numeric distribution data and Mann-Whitney test for abnormal distribution numeric data.

Result: The proportion of extubation failure was 80% and mortality rate was 75%. There were significantly different results of BALF CD4 T cells lymphocyte fraction in severe pneumonia group of patients based on extubation status ($p=0,006$) and mortality status ($p=0,002$). Blood CD4 T cells lymphocyte fraction and blood CD4/CD8 T cells lymphocyte ratio were found significantly higher in the successfully extubation group of patients compared to extubation failure group of patients; and also significantly higher in survived group of patients compared to mortality group of patients with pneumonia severe.

Conclusion: Fraction of CD4 BALF in severely injured pneumonia lungs group of patients who had succesful intubation processes were statistically different compared to the group of patients with unsuccessful extubation. Fraction of CD4 BALF were also found statistically different in the group of patients who were survived compared to the group of patients who were passed away.