Perbedaan Rerata Serta Korelasi Kadar Interleukin-6 Pada Serum Dan Bronchoalveolar Lavage Dalam Hubungannya Dengan Kejadian Gagal Ekstubasi Dan Mortalitas Pasien Pneumonia Berat Di RSUPN Cipto Mangunkusumo = The Mean Differences and Comparison of Interleukin-6 Levels in Serum and Bronchoalveolar Lavage and Their Correlation to Extubation Failure and Mortality of Severe Pneumonia Patient in RSUPN Cipto Mangunkusumo

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Abstrak

Latar Belakang Pneumonia adalah suatu penyakit akibat infeksi pada paru yang menjadi masalah serius, dengan tingkat mortalitas yang mencapai 42,4% di Indonesia sendiri. Pneumonia dikaitkan dengan mortalitas tinggi, salah satunya pada kondisi kegagalan ekstubasi yang terjadi pada pasien yang memerlukan intubasi. Proses patologis ini dikaitkan dengan peningkatan sitokin proinflamasi seperti IL-6 yang dapat ditemukan pada serum ataupun bilasan bronkoalveolar. Penelitian-penelitin terdahulu belum menentukan kaitan sitokin IL-6 dengan prognosis pasien terkait mortalitas dan kegagalan ekstubasi, serta belum menentukan korelasi kadar IL-6 serum dan bilasan bronkoalveolar pada pasien meninggal dan pasien gagal ekstubasi.
Tujuan Mengetahui perbandingan kadar IL-6 pada serum dan bilasan bronkoalveolar pada pasien sesuai dengan status mortalitas dan ekstubasi pada pasien pneumonia berat, serta korelasi kadar IL-6 sersum dan bilasan bronkoalveolar pada pasien meninggal dan gagal ekstubasi.
Metode Penelitian dengan desain kohort prospektif dilakukan pada 40 pasien pneumonia berat yang terintubasi dan menjalani tindakan bronkoskopi di IGD dan ruang intensif RSCM sejak November 2020 hingga Januari 2021. Kadar IL-6 pada pemeriksaan serum dan pemeriksaan bilasan bronkoalveolar kemudian dianalisis dengan observasi keberhasilan ekstubasi selama 20 hari dan status mortalitas selama 28 hari. Analisis univariat pada karakteristik pasien dilanjutkan dengan analisis bivariat dengan uji perbedaan dua rerata tidak berpasangan dengan data skala numerik dilakukan pada data sebaran normal dan uji Mann-Whitney dilakukan pada data sebaran tidak normal.
Hasil Dalam penelitian, didapatkan rasio gagal ekstubasi dan mortalitas sebesar 80% dan 75% secara berurutan. Tidak ditemukan perbedaan bermakna antara kadar IL-6 serum ataupun bilasan bronkoalveolar pada status mortalitas dan ekstubasi pasien. Namun, ditemukan korelasi positif antara kadar IL-6 serum dan kadar IL-6 bilasan bronkoalveolar pada pasien meninggal (r=0,551) dan gagal ekstubasi (r=0,567).
Kesimpulan Tidak terdapat perbedaan bermakna pada kadar IL-6 serum dan bilasan bronkoalveolar antara pasien meninggal dan hidup, serta pasien berhasil atau gagal ekstubasi. Namun, terdapat hubungan positif antara kadar IL-6 serum dan bilasan bronkoalveolar pada pasien meninggal dan gagal ekstubasi.
.....Background. Pneumonia is a disease caused by infection in the lungs which has become a serious health issue, with a mortality rate of 42.4% in Indonesia itself. Pneumonia is associated with high mortality, one of which is in conditions of extubation failure that occurs in patients who require intubation. This pathological process is associated with an increase in pro-inflammatory cytokines such as IL-6 that can be found in serum or bronchoalveolar lavage. Previous studies have not determined the association of the IL6 cytokine with the

prognosis of patients related to mortality and extubation failure, nor have they determined the correlation of serum IL-6 levels and bronchoalveolar lavage in patients dying and patients failing to extubate.
Purpose. To analyze the comparison of IL-6 levels in serum and bronchoalveolar lavage in patients based on their mortality and extubation status in severe pneumonia patients, as well as the correlation of IL-6 levels in serum and bronchoalveolar lavage in patients who died and failed extubation.
Method. The study with a prospective cohort design was conducted on 40 severe pneumonia patients who were intubated and underwent bronchoscopic procedures in the emergency room and intensive room of RSCM from November 2020 to January 2021. IL6 levels were examined on serum and bronchoalveolar lavage sample, which then analyzed with the observation for extubation status for 20 days and mortality status for 28 days. Univariate analysis on patient characteristics was followed by bivariate analysis with unpaired two-mean difference tests with numerical scale data performed on normal distribution data and Mann-Whitney test performed on abnormal distribution data
Result. In the study, the ratio of extubation failure and mortality was 80% and 75% respectively. No significant difference was found between serum IL-6 levels or bronchoalveolar lavage IL-6 levels based on the mortality and extubation status of patients. However, a positive correlation was found between serum IL-6 levels and IL-6 levels of bronchoalveolar lavage in patients who died ($r=0.551$) and failed extubation ($r=0.567$).
Conclusion. There were no significant differences in serum IL-6 levels and bronchoalveolar lavage between deceased and living patients, as well as patients succeeded or failed to be extubated. However, there was a positive correlation between serum IL-6 levels and bronchoalveolar lavage IL-6 levels in patients who died and failed extubation.