

## Hubungan kadar retinol serum dengan derajat bacterial load pada pasien tuberkulosis paru kasus baru di puskesmas = Correlation between serum retinol level and semi-quantitative bacterial load in new case of pulmonary tuberculosis at a community health center

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### Abstrak

Latar belakang dan tujuan: Tuberkulosis (TB) sampai saat ini merupakan tantangan dan ancaman besar bagi kesehatan masyarakat di dunia. Insidens TB paru di kota Bekasi tahun 2014 adalah 1359/2.510.951 penduduk dan 3099 total kasus selama tahun 2014. Defisiensi mikronutrien seperti retinol dapat terjadi akibat hilangnya nafsu makan, gangguan absorpsi usus halus yang menyebabkan keadaan imununosupresi sehingga meningkatkan risiko infeksi TB. Penelitian ini bertujuan untuk mengetahui hubungan antara kadar retinol serum dengan derajat bacterial load TB paru kasus baru di tingkat pelayanan primer.

Metode: Penelitian mempergunakan desain potong lintang dengan 135 sampel yang diambil dengan cara cluster consecutive sampling di puskesmas wilayah kota Bekasi pada penderita TB paru kasus baru yang belum mendapatkan terapi obat anti tuberkulosis (OAT).

Hasil: Karakteristik subjek TB paru kasus baru di puskesmas menurut usia dengan nilai tengah 35,5 tahun (IQR 18-65), laki-laki 62,3%, perokok 44,9%, IMT gizi kurang 56,5%, hipoalbumin 17,4%, kadar retinol serum defisien 40,6%. Lesi kavitas 30,4% dan derajat bacterial load mayoritas scanty dan +1 dengan persentase berturut-turut 10,1% dan 39,1%. Terdapat perbedaan bermakna kadar albumin, IMT, lesi kavitas dengan bacterial load dengan nilai  $p=0,003$ ,  $p=0,014$ ,  $p=0,011$  namun tidak terdapat hubungan bermakna antara kadar retinol serum dengan bacterial load.

Kesimpulan: Kadar retinol serum tidak berhubungan dengan derajat bacterial load pasien TB paru kasus baru di wilayah kerja kota Bekasi serta terdapat hubungan bermakna antara IMT, kadar albumin dan lesi radiologis dengan bacterial load.

.....Background: Tuberculosis (TB) remains a threat for community health across the globe including Indonesia. The incidence of pulmonary TB in Bekasi, Indonesia in 2014 is 1,395/2,510,951 people and there were 3,099 cases in 2014. Micronutrient deficiency such as retinol can be caused by loss of appetite and disorder in intestinal absorption which could lead to immunosuppressive condition that increased the risk of TB. This study aims to find the correlation between serum retinol level and semi-quantitative bacterial load in new case of pulmonary TB at a community health center.

Methods: This cross-sectional study involved 135 subjects collected through cluster consecutive sampling in a primary health care in Bekasi, Indonesia. The study included new pulmonary TB cases which had no history of taking any anti-TB drugs.

Results: The median age of the subjects was 35.5 years old (IQR 18-65) and most of subjects were males (62.3%), smokers (44.9%), had low body mass index (BMI) (56.5%), had hypoalbuminemia (17.4%), serum retinol deficient (40.6%), presented with cavity lesion (30.4%) and presented with scanty and +1 semi-quantitative bacterial load (10.1% and 39.1%, respectively). There was no significant correlation between serum retinol level and semi-quantitative bacterial load. However, there were significant correlations between serum albumin level, BMI and presence of cavity lesion and semi-quantitative bacterial load

( $p=0.003$ ,  $p=0.014$ , and  $p=0.011$ , respectively).

Conclusion: There was no correlation between serum retinol level and semi-quantitative bacterial load in new cases of pulmonary TB patients. There were significant correlations between serum albumin level, BMI and presence of cavity lesion and semi-quantitative bacterial load.