

Hubungan kadar c-reactive protein dengan penurunan kadar albumin pada pasien usia lanjut dengan pneumonia komunitas yang dirawat di rumah sakit = Relationship between c-reactive protein level and decreased of serum albumin level in hospitalized elderly patients with community-acquired pneumonia

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Abstrak

Latar Belakang. Hipoalbuminemia sudah diketahui merupakan faktor prediktor morbiditas dan mortalitas pada pasien usia lanjut dengan pneumonia dan CRP merupakan petanda klinis yang penting pada pneumonia. Namun hubungan antara kadar CRP dengan penurunan kadar albumin, sebagai protein fase akut negatif, saat infeksi akut belum pernah diteliti sebelumnya.

Tujuan. Mendapatkan: (1) perbedaan kadar CRP awal perawatan antara pasien dengan dan tanpa penurunan albumin, (2) perbedaan risiko terjadinya penurunan albumin antara pasien dengan kadar CRP awal tinggi dan rendah, dan (3) korelasi antara kadar CRP dan albumin saat awal perawatan pada pasien-pasien usia lanjut dengan pneumonia komunitas yang dirawat di rumah sakit.

Metodologi. Stuart potong-lintang dan kohort-prospektif dilakukan pada pasien-pasien usia lanjut (>60 tahun) dengan diagnosis pneumonia komunitas yang dirawat di RSCM, untuk diamati penurunan kadar albuminnya selama 5 hari perawatan. Pasien-pasien dengan keadaan-keadaan yang dapat mempengaruhi kadar albumin dan CRP, serta infeksi selain pn komunitas dieksklusi dari penelitian. Penilaian kadar CRP dilakukan pada hari pertama perawatan (cut-off 20 mg/L), sementara penurunan albumin ditentukan dari perubahan kadar albumin selama 5 hari perawatan (cut-off 10%). Analisis statistik dilakukan dengan uji-t independen, uji chi-square, dan uji korelasi sesuai dengan tujuan penelitian.

Hasil Utama. Selama periode April-Juni 2005 terkumpul 26 pasien usia lanjut dengan pneumonia komunitas yang masuk perawatan di RSCM. Hanya 23 pasien yang menyelesaikan penelitian sampai 5 hari dengan 17 pasien memiliki kadar CRP awal tinggi, dan didapatkan penurunan albumin >10% pada 7 pasien setelah 5 hari perawatan. Terdapat perbedaan rerata kadar CRP hari-1 diantara kedua kelompok (175,36 mg/L vs 75,67 mg/L; $P = 0,026$; 1K95% 13,25-186,13 mg/L). Namun tidak didapatkan perbedaan risiko bermakna antara pasien dengan kadar CRP tinggi dengan pasien dengan kadar CRP rendah saat awal dengan terjadinya penurunan albumin saat awal perawatan ($RR = 2,12$; $P = 0,621$; 11(95% 0,256-29,07). Tidak didapatkan pula korelasi antara kadar CRP dan albumin saat awal perawatan ($r = 0,205$, $P = 0,314$)

Kesimpulan. Tingginya kadar CRP awal perawatan berhubungan dengan terjadinya penurunan kadar albumin selama perawatan, namun tidak ada perbedaan risiko terjadinya penurunan albumin selama perawatan antara pasien dengan CRP awal tinggi dan CRP awal rendah, serta tidak ada korelasi antara kadar CRP dan albumin saat awal perawatan pada pasien-pasien usia lanjut dengan pneumonia komunitas yang dirawat di rumah sakit.

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Backgrounds. Hypoalbuminemia widely known as a predictive factor for increasing morbidity and mortality in elderly patients, including with pneumonia; while CRP has known as a clinical marker for pneumonia. But relationship between CRP level with decrease of serum albumin level, as a negative acute-phase protein, during acute infection has never been studied before.

Objectives. To found: (1) CRP level difference between patient with and without decreased of serum albumin level, (2) risk for developing decreased of serum albumin level in patients with high CRP compared to patients with low CRP level, and (3) correlation between CRP and albumin level on admission in hospitalized elderly patients with community-acquired pneumonia.

Methods. Cross-sectional and prospective-cohort studies was conducted in hospitalized elderly patients with community-acquired pneumonia that admitted to RSCM, to observed the decreased of serum albumin level in five days of hospitalization. Conditions that known could influence CRP and albumin concentration have been excluded, and other infections as well. CRP level was determined on admission (cut-off 20 mgfL), while decreased of serum albumin was observed for 5 days of hospitalization (cut-off 10%). Statistical analysis was done by using independent t-test, chi-square test, and correlation test appropriately according to the objectives of the study.

Main Results. During study period (April to June, 2005) 26 hospitalized elderly patients with community-acquired pneumonia had been included into study, but only 23 of them that finished the study for 5 days. There were 17 patients that have high level of CRP on admission, and 7 patients that developing decreased of serum albumin level more than 10% in fifth day compared to their serum albumin level on admission. There was significant mean CRP difference among 2 groups (175,36 mgfL vs 75,67 mg/L; $P = 0,026$; 95%CI 13,25-186,13 mgfL), but there was no risk difference between patients with high and low CRP level on admission for developing decreased albumin level on fifth day of hospitalization (RR = 2,12; $P = 0,621$; 95%CI 0,256-29,07). And there was no correlation between CRP and albumin level on admission ($r = 0,205$, $P = 0,314$)

Conclusions. Patients with high CRP level on admission tend to have decreased of serum albumin level during hospitalization, but there was no risk difference for developing decreased of serum albumin level between patients with high and low CRP level, and there was no correlation between CRP and albumin level on admission in hospitalized elderly patients with community-acquired pneumonia.