

# Hubungan kadar plasma citrullinated histone H3 (CIT H3) terhadap derajat keparahan sepsis klinis pada anak dan prognosis survivalnya: studi pendahuluan = Association of plasma citrullinated histone H3 (CIT H3) level with disease severity and prognostic survival in pediatric clinically sepsis: pilot study

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## Abstrak

Latar belakang: Sepsis merupakan salah satu penyebab morbiditas dan mortalitas pada anak. Untuk optimalisasi tatalaksana sepsis diperlukan penanda yang dapat memprediksi kejadian sepsis, derajat keparahan dan luaran sepsis klinis.

Tujuan penelitian: Mengetahui kadar plasma Cit H3 sepsis klinis pada anak dan menganalisa hubungannya terhadap derajat keparahan penyakit dan prognostik survivalnya.

Metode penelitian: Penelitian observasional pendekatan kohort prospektif dilakukan pada anak usia satu bulan sampai 18 tahun dengan diagnosis sepsis klinis sejak Pebruari - Mei 2018 di RSUPN Cipto Mangunkusumo, Jakarta. Penilaian skor PELOD-2, pSOFA dan Cit H3 dilakukan saat diagnosis ditegakkan dan 48 jam kemudian. Mortalitas dipantau selama tujuh hari.

Hasil: Diperoleh 67 anak memenuhi kriteria dengan median kadar plasma Cit H3 1.210 800-32.160 ng/mL. Berdasarkan sepsis-3, kadar plasma Cit H3 pasien sepsis lebih tinggi dibandingkan curiga sepsis.

Sensitivitas dan spesifisitas kadar plasma Cit H3 ge; 1.200 ng/mL sebagai penanda kejadian sepsis adalah 83,3 dan 75,7.

Perubahan kadar plasma Cit H3 dalam 48 jam berhubungan dengan progresifitas sepsis klinis. Citrullinated histone H3 berkorelasi dengan skor PELOD-2  $r=0,338$ ;P

**Background:** Sepsis is a life threatening organ dysfunction causing high morbidity and mortality in children thus, a highly predictive septic marker to forecast its severity and predict mortality is needed.

**Aim:** To determine plasma Cit H3 levels in clinically sepsis children and analyze its correlation with disease severity and survival rate.

**Method:** A prospective observational study was conducted in one month ndash 18 years old children with diagnosed clinically sepsis during February ndash April 2018 in Cipto Mangunkusumo Hospital, Jakarta. Evaluation of PELOD 2, pSOFA score, and Cit H3 were done when diagnosis initially made and 48 hours after. Patient rsquo s survival was observed for 7 days.

**Results:** Sixty seven children with clinically sepsis had median plasma Cit H3 level 1,210 800 ndash 32,160 ng mL. The plasma Cit H3 level in patients who diagnosed with sepsis sepsis 3 was higher than suspected sepsis. As marker sepsis event, plasma Cit H3 level with cut off point ge 1,200 ng mL has sensitivity 83,3 and specificity 75.5. Changes in plasma Cit H3 level in the first 48 hours was significantly correlated with changes in clinical outcome. Plasma Cit H3 level also correlated with PELOD 2 and pSOFA score. Using survival analysis, plasma Cit H3 level ge 1,200 ng mL significantly increased mortality rate.

**Conclusion:** Plasma Cit H3 level correlates with severity and survival rate of clinically diagnosed sepsis.