

# Kadar D-Dimer Plasma sebagai Prediktor Kematian Penderita Pneumonia Usia 2–59 Bulan

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## Abstrak

Pada pneumonia berat, terjadi koagulasi intravaskular dan intraalveolar yang merupakan respons proses inflamasi lokal dan sistemik infeksi paru. Konsekuensi klinis dari perubahan koagulasi ini yaitu peningkatan kadar D-dimer plasma sebagai petanda aktivitas koagulasi dan fibrinolisis serta meluasnya disfungsi organ bahkan kematian. Tujuan penelitian ini untuk mengetahui validitas kadar D-dimer plasma yang tinggi sebagai prediktor kematian penderita pneumonia usia 2 sampai 59 bulan. Penelitian ini merupakan penelitian observasional analitik dengan rancangan prospektif yang dilaksanakan di Rumah Sakit Dr. Hasan Sadikin Bandung. Subjek penelitian anak usia 2 sampai 59 bulan yang didiagnosis sebagai pneumonia dan berobat ke Instalasi Gawat Darurat Anak selama bulan Oktober–November 2009. Pemeriksaan D-dimer plasma dilakukan saat penderita datang dan kemudian dilakukan observasi sampai penderita meninggal atau dipulangkan dari rumah sakit. Empat puluh lima anak ikut serta dalam penelitian ini, 15 (33%) di antaranya meninggal selama observasi. Kadar D-dimer plasma menunjukkan hubungan yang bermakna ( $p=0,04$ ) terhadap kematian penderita pneumonia dengan median dan rentang sebesar 0,60 mg/L (0,1–5,10 mg/L). *Cut-off point* D-dimer plasma  $>0,4$  mg/L sebagai prediktor kematian penderita pneumonia memberikan sensitivitas 73,3% (IK 95%; 44,9–92,0) dan spesifisitas 70,0% (IK 95%; 50,6–85,2%) dengan akurasi 71,1%. Simpulan, kadar D-dimer plasma yang tinggi dapat memprediksi kematian penderita pneumonia usia 2 sampai 59 bulan. [MKB. 2012;44(1):57–62].

**Kata kunci:** Kadar D-dimer plasma, koagulasi, pneumonia, prediktor kematian

## Plasma D-Dimer Level as Predictor of Mortality in 2–59-Month-Old Pneumonia Patients

## Abstract

Intravascular and intraalveolar coagulation can be found in severe pneumonia as a response to local and systemic inflammation process in severe pneumonia. Clinical consequences of this coagulation changes is an increase of plasma D-dimer levels as a marker of coagulation and fibrinolysis activation, the number of organ dysfunction even death. The aim of this study was to understand the validity of high plasma D-dimer levels as a predictor of mortality in 2 to 59-month-old pneumonia patients. This was a prospective observational analytic study which was held in Dr. Hasan Sadikin Hospital Bandung. The subjects of this study were 2 to 59 months old children who were diagnosed as pneumonia and visited Pediatric Emergency Department during October–November 2009. Plasma D-dimer assay was performed at admission and observed until the patient died or discharged from the hospital. Forty-five children were included in this study, 15 (33%) died during observation. Plasma D-dimer level showed significant correlations ( $p=0.04$ ) with the mortality in 2 to 59-month-old pneumonia patients with median and range of 0.60 mg/L (0.1–5.10 mg/L). Plasma D-dimer cut-off point of  $>0.4$  mg/L gave 73.3% sensitivity (CI 95%, 44.9–92.0%), and 70.0% specificity (CI 95%, 50.6–85.2%) with 71.1% accuracy for predicting mortality in 2 to 59-month-old pneumonia patients. In conclusions, there were significant correlations between elevated plasma D-dimer levels and mortality in 2 to 59-month-old patients with pneumonia. [MKB. 2012;44(1):57–62].

**Key words:** Coagulation, plasma D-dimer levels, pneumonia, predictor of mortality

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