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Kadar kotinin urin pada anak yang terpajan asap rokok di lingkungan rumah = The urinary cotinine concentration in children exposed to environmental tobacco smoke at home

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Abstrak

ABSTRAK
 Latar Belakang : Kotinin merupakan hasil metabolit utama nikotin dan kadarnya pada urin merupakan indikator pajanan asap rokok. Penlitian ini untuk mengetahui kadar kotinin urin pada anak yang terpajan dan tidak terpajan asap rokok di lingkungan rumah.
Metode : Penelitian potong lintang pada anak usia sekolah dasar yang tidak merokok. Subjek dikelompokkan menjadi kelompok terpajan dan tidak terpajan berdasarkan status pajanannya. Data yang diperoleh dari kuesioner dan sampel urin sewaktu yang diukur dengan metode ELISA.
Hasil : Total subjek 128 anak usia 6-12 tahun yang terdiri dari 64 anak pada kelompok terpajan dan 64 anak yang tidak terpajan. Kadar kotinin urin pada kelompok terpajan lebih tinggi dibandingkan kelompok tidak terpajan (median 30,1 vs 8,45 ng/ml; p<0.05). Terdapat perbedaan kadar kotinin pada anak yang terpajan asap rokok dengan jumlah batang rokok yang dihisap oleh perokok di rumah (p<0.05). Status pajanan asap rokok berhubungan dengan keluhan batuk, infeksi saluran napas atas dan rawat inap karena keluhan respirasi pada anak. Nilai titik potong optimal kadar kotinin urin pada anak untuk menilai pajanan asap rokok yaitu 17,95 ng/ml (sensitifitas 81%, spesifisitas 81%, AUC 91,2%, p<0.05).
Kesimpulan: Kadar kotinin urin dapat digunakan sebagai biomarker yang tidak invasif untuk evaluasi pajanan asap rokok pada anak.
ABSTRACT
 Introduction : The cotinine is major metabolite of nicotine and the level of urinary cotinine is an indicator of tobacco smoke exposure. This study investigate role of urinary cotinine level in children exposed and unexposed to tobacco smoke at home.
Method : A Cross sectional study that enrolled elementary school nonsmokers children classified into exposed group and unexposed group based on tobacco smoke sexposure status. The questionnaire and spot urinary samples were collected and urinary cotinine levels were measured by ELISA.
Results : A total 128 nonsmokers children age 6-12 years divided into 64 children in exposed group and 64 children in unexposed group. The urinary cotinine levels in exposed group significantly higher than unexposed group (median 30,1 ng/m; vs 8,45 ng/ml; p<0.05). There was significant difference of urinary cotinine level in exposed group with number of cigarettes (p<0.05). Tobacco smoke exposure status associated with frequent cough symptom, upper respiratory infection and hospitalization because of respiratory symptoms in subjects. The optimal cut off

point urinary cotinine in children to distinguish unexposed children with exposed to tobacco smoke at home was 17,95 ng/ml (sensitivity 81%, spesificity 81%, p<0.05).

Conclusion : The urinary cotinine level is useful and noninvasive biomarker for evaluating tobacco smoke exposure in children. ;Introduction : The cotinine is major metabolite of nicotine and the level of urinary cotinine is an indicator of tobacco smoke exposure. This study investigate role of urinary cotinine level in children exposed and unexposed to tobacco smoke at home.

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