

## Efek pajanan asap rokok lingkungan terhadap kadar kotinin urin dan uji fungsi paru pada anak = Effects of enviromental tobacco smoke exposure on urinary cotinine level and lung function test in children

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### Abstrak

Latar Belakang: Menurut Global Youth Tobacco Survey GYTS Indonesia 2014, 57,3 siswa terpajan asap rokok. Pajanan asap rokok menyebabkan inflamasi saluran nafas dan paru, serta penurunan fungsi paru. Kotinin sebagai metabolisme nikotin dapat digunakan sebagai biomarker pajanan asap rokok. Tujuan: Mengetahui efek pajanan asap rokok lingkungan terhadap kadar kotinin urin dan uji fungsi paru pada anak. Metode: Penelitian teknik potong lintang dengan subyek siswa berusia 11-16 tahun di Jakarta. Data didapat dari kuesioner, spirometri, dan penghitungan kadar kotinin urin dengan metode ELISA. Hasil: Terdapat 92 subyek, terdiri dari 46 kelompok kasus dan 46 kelompok kontrol. Kadar kotinin urin >10 ng/ml ditemukan pada 37,0 kelompok kasus dan 4,3 kelompok kontrol;  $p=0,000$ ;  $OR=8,50$   $95\% \text{ IK } 2,08-34,71$  . Terdapat perbedaan bermakna kadar kotinin urin terhadap jumlah perokok  $p=0,027$  dan jumlah batang rokok per hari  $p=0,037$  . Tidak ditemukan hubungan pajanan asap rokok dengan uji fungsi paru. Terdapat perbedaan bermakna absensi anak pada kelompok kasus dibandingkan kelompok kontrol;  $p=0,004$ ;  $OR=6,00$   $95\% \text{ IK } 1,42-25,33$  . Kesimpulan: Anak yang terpajan asap rokok memiliki kadar kotinin urin lebih tinggi dibandingkan yang tidak terpajan, yang dapat dipengaruhi oleh jumlah perokok dan jumlah batang rokok per hari.

.....Background Global Youth Tobacco Survey GYTS 2014 in Indonesia showed that 57,3 of students are exposed to enviromental tobacco smoke, which causes inflammation of respiratory tracts and decrease of lung function. Urinary cotinine can be used as biomarker for cigarette smoke exposure. Objectives To examine effects of enviromental tobacco smoke exposure on urinary cotinine level and lung function test in children. Methods Subjects were students aged 11 16 years old in Jakarta. Data were obtained from questionnaire, spirometry, and urinary cotinine test using ELISA method. Results There were 92 subjects, consisted of 46 case group and 46 control group. Urinary cotinine level 10 ng ml was found in 37,0 of case group and 4,3 of control group  $p 0,000$   $OR 8,50$   $CI 95 2,08 34,71$  . There were significant differences between urinary cotinine level with number of smokers  $p 0,027$  and number of cigarettes per day  $p 0,037$  . No association was found between cigarette smoke exposure and lung function test. There was a significant difference in school absence between case group and control group  $p 0,004$   $OR 6,00$   $CI 95 1,42 25,33$  . Conclusions Children exposed to enviromental tobacco smoke have higher urinary cotinine level than non exposed children. Factor such as number of smokers and number of cigarettes per day may affect urinary cotinine level.