

## Kadar serum benzo(a) pyrene diol epoxide bpde -protein adducts pada perokok dan bukan perokok dan faktor-faktor yang mempengaruhi = Benzo(a)pyrene diol epoxide protein adducts serum level in kretek smokers and non smokers and the influence factors

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### Abstrak

#### <b>ABSTRAK</b><br>

Latar Belakang : Benzopyrene polycyclic aromatic adalah agen karsinogenik yang ditemukan dalam asap rokok. Benzo a pyrene Diol Epoxide BPDE adalah salah satu metabolit benzopyrene. Perokok kretek adalah orang yang merokok minimal 1 rokok kretek per hari selama minimal 1 tahun tanpa atau kurang dari 20 nya merokok dengan rokok putih. Kami meneliti kadar BPDE dalam darah perokok kretek dibandingkan dengan bukan perokok. Metode : Penelitian ini menggunakan desain potong lintang yang mengikutsertakan 32 subjek sehat yang merokok kretek dan 32 subjek sehat bukan perokok. telah menandatangani lembar persetujuan diperiksa kadar CO ekshalasi dengan menggunakan alat pengukur CO portabel kemudian diambil sampel darah untuk diukur kadar BPDE-protein adducts. Data yang diperoleh diuji dengan menggunakan statistical package for social sciences SPSS 21. Hasil : Total 64 responden yang dibagi menjadi 32 subjek perokok kretek dan 32 kontrol diperiksa kadar BPDE-protein adducts dan kadar CO ekshalasi. Karakteristik subjek didapatkan sebanyak 59,4 usia perokok kretek di atas 45 tahun dan 56,3 mempunyai latar belakang pendidikan tinggi sedangkan pada kelompok kontrol 87,5 berusia di bawah 45 tahun dan 75 mempunyai latar belakang pendidikan tinggi. Kadar BPDE-protein adducts pada subjek perokok kretek sebesar 12,15 8,87-33,55 ng/ml dan kadar pada kelompok kontrol sebesar 11,4 3,87-13,27 ng/ml,  $p=0,004$ . Faktor yang mempengaruhi kadar BPDE-protein adducts pada perokok kretek berdasarkan analisis multivariat adalah pola hisapan  $p=0,002$  dan derajat adiksi  $p = 0,047$  . Terdapat hubungan yang bermakna secara statistis antara kadar BPDE-protein adducts dengan kadar CO ekshalasi pada perokok kretek  $p=0,003, r=0,512$  . Kesimpulan : Kadar BPDE-Protein adducts pada perokok lebih tinggi dibanding bukan perokok dengan pola hisapan dan derajat adiksi menjadi faktor yang mempengaruhi Kata Kunci : Benzo a pyrene, CO ekshalasi, BPDE-protein adduct

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#### <b>ABSTRACT</b><br>

Background Benzopyrene polycyclic aromatic is a carcinogenic agent found in cigarettes smoke. Benzo a pyrene Diol Epoxide BPDE is one of the benzopyrene metabolite. Kretek cigarette smoker isa person who smokes at least 1 cigarette per day for at least 1 year with no or less than 20 of amount and time of white cigarettes smoking. We investigated the BPDE serum level in kretek cigarette smokers compared to non smokers Method This is a cross sectional study of which 32 "healthy" kretek cigarette smokers and 32 "healthy" non smoker were enrolled in this study. We collected blood sample and we analyzed the BPDE level and also their exhale carbon monoxide CO level during expiration. Serum BPDE level were assayed using ELISA kit. The data obtained were tested using statistical package for social sciences SPSS 21. Results A total of 32 kretek smokers subjects and 32 controls was underwent examination of BPDE protein adducts level and exhalation CO levels. Characteristics of the subjects obtained was 59.4

kretek smokers aged over 45 years and 56.3 have a high education background, while in the control group 87.5 were aged under 45 years and 75 have high educational backgrounds. The levels of BPDE protein adducts in the kretek smokers subject was 8.87 to 33.55 ng ml and the levels in the control group was 11.43.87 to 13.27 ng ml, p 0.004. The factors which influence the levels BPDE protein adducts in smokers cigarettes the most by multivariate analysis were sucking pattern p 0.002 and the degree of addiction p 0.047 . There was a statistically significant relationship between the level of BPDE protein adducts with exhalation CO levels in kretek smokers p 0.003 . Conclusion Serum BPDE protein adducts level higher in smokers compared nonsmokers with suction pattern and degree of addiction are influence factors