Analisis pajanan diesel particulate matter terhadap peningkatan kadar HbA1c dalam darah pada petugas uji mekanis UP PKB Cilincing Dinas Perhubungan DKI Jakarta tahun 2017 = Analysis of diesel particulate matter exposure to increase HbA1c in blood level at motor vehicle testing officer Cilincing Jakarta 2017

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Abstrak

Diesel particulate matter baik fine maupun ultrafine particulate berkontribusi terhadap pajanan personal harian pekerja. Pajanan diesel particulate matter dalam jangka waktu pendek maupun dalam jangka waktu panjang dapat mengganggu kesehatan. Gangguan kesehatan tersebut antara lain menyebabkan perubahan glukosa, HbA1c dan lipid. Penelitian ini merupakan penelitian analitik yang bertujuan menganalisis pajanan diesel particulate matter yang dikaitkan dengan peningkatan HbA1c dalam darah. Sampel penelitian adalah petugas uji mekanis berjumlah 18 orang dan 13 petugas administrasi di Unit Pengelola Pengujian Kendaraan Bermotor Cilincing dan 18 kelompok pembanding. Adapun variable penelitian adalah pajanan diesel particulate matter, kadar HbA1c, usia, Indeks Masa Tubuh (IMT), lama kerja, dan kebiasaan merokok. Pengukuran pajanan particulate matter menggunakan pompa Leland legacy dan Sioutas cascade impactor dan perhitungan konsentrasi pajanan menggunakan metode gravimetric. Penimbangan filter debu hasil sampling menggunakan alat Neraca Mikro Mettler Toledo. Pengukuran kadar HbA1c dalam darah bekerja sama dengan Laboratorium Kesehatan. Hasil penelitian menunjukan adanya hubungan yang kuat dan berkorelasi positif antara konsentrasi pajanan personal PM10, PM2.5, PM1, PM0.5 dan PM0.25 dengan tingkat kadar HbA1c dalam darah.

.....Diesel particulate matter both fine and ultrafine particulate contribute to daily personal exposure of workers. Exposure to diesel particulate matter in the short term and in the long term can disrupt health. These health problems include changes in glucose, HbA1c and lipids. This study is an analytical study that aims to analyze the exposure of diesel particulate matter associated with increased HbA1c in the blood. The samples were mechanical test officer totaling 18 people and 13 administrative officers in Cilincing Motor Vehicle Testing Unit and 18 comparison groups. The research variables are diesel particulate matter exposure, HbA1c level, age, body mass index (BMI), length of service, and smoking habit. Measurement of particulate matter exposure using Leland legacy and Sioutas cascade impactor pumps and calculation of exposure concentration using gravimetric method. Weighing of sampling dust filter using Mettler Toledo Micro Balance tool. Measurements of HbA1c levels in the blood work in conjunction with the Health Laboratory. The results showed a strong and positively correlated relationship between the personal exposure concentrations of PM10, PM2.5, PM1, PM0.5 and PM0.25 with levels of HbA1c in the blood.