

Gambaran pajanan debu PM 2,5 dan kadar plasma testosteron para pekerja gerbang tol pria tahun 2014 = Descriptive of PM 2,5 exposure and plasma testosterone levels to toll gate workers in 2014

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Abstrak

[ABSTRAK

Particulate Matter 2,5 (PM 2,5) adalah partikel halus memiliki diameter aerodinamis kurang dari 2,5 m, partikel ini terbentuk dari gas dan kondensasi uap suhu tinggi selama pembakaran. Sumber partikel berasal dari alam dan antropogenik. Beberapa partikel bebas dapat juga masuk ke dalam saluran limfa. Partikel-partikel yang dapat larut mungkin diserap lewat epitel ke dalam darah. Testosteron adalah hormon steroid yang diproduksi di testis pada pria dan di ovarium pada wanita (dalam jumlah yang terbatas testosteron pada wanita juga diproduksi dalam kelenjar adrenal).

Pengukuran partikel PM 2,5 dilakukan di dalam dan di luar gardu tol menggunakan pompa leland legacy. subyek penelitian ini adalah para pekerja gerbang tol dengan pengambilan sampel darah. Jumlah sampel 45 orang pekerja dan 15 orang bukan pekerja gerbang tol.

Hasil pengukuran PM 2,5 dihitung menggunakan rumus dari leland legacy. Berdasarkan hasil penelitian nilai rata-rata konsentrasi PM 2,5 di dalam gardu 316,35 g/m³ dan di luar gardu sebesar 152,11 g/m³. Hasil uji statistik menunjukkan tidak ada perbedaan antara konsentrasi PM 2,5 baik di dalam maupun di luar gardu dengan nilai P value > 0,05

Rata-rata kadar plasma testosteron pekerja gerbang tol adalah 604,67 ng.dl, sedangkan untuk bukan pekerja gerbang tol adalah 750,30 ng/dl. Hasil uji statistik menunjukkan nilai P value > 0,05 berarti tidak ada perbedaan antara kadar plasma testosteron pekerja gerbang tol dan bukan pekerja gerbang tol.

Tidak ada hubungan yang signifikan antara testosteron dengan faktor usia, perilaku merokok, dan status gizi baik pekerja gerbang tol maupun bukan pekerja gerbang tol. Walaupun demikian perlu dilakukan pemeriksaan kesehatan secara rutin untuk mencegah pajanan.

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ABSTRACT

Particulate Matter (PM 2.5) are fine particles having an aerodynamic diameter of less than 2.5 lm, these particles are formed from gas and high temperature steam condensation during combustion. Particles derived from natural sources and anthropogenic. Some free particles can also enter into the lymph channels. The particles may be absorbed through soluble epithelium into the blood. Testosterone is a steroid hormone produced in the testes in men and ovaries in women (a

limited amount of testosterone in women is also produced in the adrenal glands). Measurement of PM 2.5 particles carried inside and outside the toll booth using a pump leland legacy. This research is the subject of the toll gate workers with blood sampling. Number of samples 45 and 15 workers not tollgate workers. The results of measurements of PM 2.5 was calculated using the formula of leland legacy.

Based on the results of the study the average value of the concentration of PM 2.5 in the substation 316.35 g/m³ and outside the substation was 152.11 g/m³.

Statistical test results showed no difference between PM 2.5 concentrations both within and outside the substation with P value > 0.05

Average plasma levels of testosterone tollgate workers are ng.dl 604.67, while not working toll booths is 750.30 ng / dl. Statistical test results show the value of the P value > 0.05 means that there is no difference between plasma testosterone levels toll gate workers and not the toll gate workers.

There is no significant relationship between testosterone with age, smoking behavior, and nutritional status of both workers and non-workers tollgate tollgate.

Nevertheless, health checks need to be done regularly to prevent exposure; Particulate Matter (PM 2.5) are fine particles having an aerodynamic diameter of

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