

INTISARI

Latar Belakang : Timbal merupakan salah satu komponen sisa asap kendaraan seperti pada bus. Masuknya timbal ke tubuh manusia dapat melalui sistem pernapasan dan pencernaan. Timbal kemudian merusak organ-organ tubuh termasuk ginjal melalui berbagai macam mekanisme seperti mengganggu kerja protein, DNA, RNA, Lipid, maupun membentuk ROS (*reactivated oksidative stress*). Peningkatan ROS menyebabkan kerusakan jaringan, proses inflamasi dan apoptosis sel, dengan cara menargetkan protein, asam nukleat dan lipid, sehingga terjadi modifikasi, kerusakan dan inaktivasi pada sel. Paparan timbal merusak ginjal utamanya pada tubulus kolektivus proksimal dengan cara mengganggu fungsi mitokondria. Selain itu, paparan timbal juga menyebabkan atrofi kortikal dan fibrosis glomerulus. Kerusakan pada ginjal mengganggu laju filtrasi glomerulus sehingga kreatinin di darah menjadi meningkat.

Tujuan : Untuk mengetahui hubungan kadar timbal darah dengan kadar kreatinin darah pada penduduk dan pekerja di sekitar terminal bus di Yogyakarta.

Metode : Penelitian dilakukan dengan melibatkan 71 responden baik laki-laki maupun perempuan dengan rentan usia 18 sampai 79 tahun. Sampel yang diambil berupa darah vena sebanyak 5cc pada tiap responden yang merupakan masyarakat sekitar Terminal Bus Condong Catur dan Terminal Bus Jombor Yogyakarta. Kemudian sampel diperiksa kadar kreatininnya dengan metode *Photometric Colorimetric Tes* dan untuk kadar timbalnya dengan metode *Atomic Absorption Spectroscopy (AAS)*.

Hasil: Subjek penelitian didapatkan sebanyak 71 orang. Hasil uji korelasi *spearman* kadar timbal dan kreatinin menunjukkan $p : 0,053$ dengan kekuatan korelasi sangat lemah sebesar 0,661.

Kesimpulan : Tidak terdapat hubungan antara kadar timbal dengan kadar kreatinin di dalam darah dengan arah korelasi yang bernilai positif yang menunjukkan apabila kadar timbal meningkat, maka terjadi peningkatan kadar kreatinin.

Kata Kunci : Timbal darah, Kreatinin Darah, Pekerja Terminal, Penduduk Sekitar Terminal

ABSTRACT

Background: Lead is one of the vehicle exhaust emissions such as on buses. Lead entry into the human body through the respiratory and digestive systems. Lead then damages the organs of the body including the kidneys through various mechanisms such as disrupting the proteins, DNA, RNA, Lipids, and also forming ROS (reactivated oxidative stress). The Increase of the ROS causes tissue damage, inflammatory processes and cell apoptosis, by targeting proteins, nucleic acids and lipids, resulting in modification, damage and inactivation of cells. Lead exposure damages the kidneys mainly in the proximal collective tubules by interfering the mitochondrial function. In addition, lead exposure also causes cortical atrophy and glomerular fibrosis. Damage to the kidneys disrupts the glomerular filtration rate leads to increase in creatinine in the blood.

Objective: To determine the correlation of blood lead levels with creatinine serum in residents and workers in bus stations in Yogyakarta.

Method: The study involved 71 respondents both men and women, aged between 18 to 79 years. About 5cc venous blood were taken from the respondents of the community around the Condong Catur Bus Terminal and Yogyakarta Jombor Bus Terminal. Then the creatinine levels were examined by the Photometric Colorimetric Test method and for the lead levels by the Atomic Absorption Spectroscopy (AAS) method.

Results: The research subjects were 71 participants. The results of the Spearman correlation test for lead and creatinine levels showed $p: 0.015$ with a very weak correlation strength of 0,661.

Conclusion: There is a relationship between blood lead levels and creatinine serum. The positive correlation coefficient indicates that as the blood lead levels increases, the creatinine serum increases.

Keywords: Blood Lead, Creatinine Serum, Bus Station Workers, Resident in Bus Station