KORELASI PAPARAN KADMIUM TERHADAP TEKANAN DARAH, FREKUENSI DENYUT NADI DAN FREKUENSI PERNAPASAN PADA PEKERJA BENGKEL LAS DI YOGYAKARTA

Dita Satiti Purbaningrum, Sani Rachman Soleman,
Ana Fauziyati, Umatul Khoiriyah

INTISARI

Latar Belakang : Pekerja bengkel las merupakan pekerjaan yang memiliki resiko tinggi terpapar logam berat yang terkandung di dalam *fumes* pengelasan. Salah satu logam berat tersebut adalah kadmium. Kadmium dapat menimbulkan berbagai efek di tubuh manusia, seperti efek terhadap sistem kardiovaskular dan sistem respirasi.

Tujuan : Mengetahui korelasi paparan kadmium terhadap tekanan darah, frekuensi denyut nadi dan frekuensi pernapasan pada pekerja bengkel las di Yogyakarta.

Metode : Penelitian ini adalah penelitian observasional analitik dengan desain *cross-sectional* (potong lintang). Subjek penelitian sebanyak 53 diukur tekanan darah, frekuensi denyut nadi dan frekuensi respirasi serta dilakukan pungsi vena untuk diperiksa kadar kadmium darah. Kriteria inklusi subjek adalah yang bekerja minimal selama satu tahun. Data dianalisis dengan menggunakan uji Spearman.

Hasil : Kadar kadmium darah berkorelasi signifikan dengan tekanan darah diastolik dengan nilai p = 0,006. Tetapi kadar kadmium darah tidak memiliki korelasi dengan frekuensi denyut nadi (p = 0,074), tekanan darah sistolik (p = 0,359), dan frekuensi pernapasan (p = 0,655).

Kesimpulan : Kadar kadmium darah berkorelasi signifikan dengan tekanan darah diastol. Namun kadar kadmium darah tidak berkorelasi dengan frekuensi denyut nadi, tekanan darah sistol dan frekuensi pernapasan.

Kata kunci : kadmium darah, kardiovaskular, pekerja bengkel las.

CORRELATION BETWEEN CADMIUM WITH BLOOD PRESSURE, PULSE RATE AND RESPIRATORY FREQUENCY AMONG WELDING WORKERS IN YOGYAKARTA

Dita Satiti Purbaningrum, Sani Rachman Soleman,
Ana Fauziyati, Umatul Khoiriyah

ABSTRACT

Background : Welding worker is a profession that have high risk of exposed heavy metals. One of those heavy metal is cadmium. Cadmium are metal that can cause damage to the cardiovascular and respiratory system.

Objective : Aim of this study is to identify correlation between blood cadmium level with blood pressure, pulse rate and respiratory frequency among welding workers in Yogyakarta.

Method : This study was an analitic observational with cross-sectional study. The subjects consist of 53 person as welding workers. Inclusion criteria is welding worker who work at least one year. Blood pressure, pulse rate and respiratory frequency of them was measured. Blood cadmium level was measured using *Atomic Absorption Spectrophotometry* (AAS). This research using statistical analysis of Spearman test.

Result : Result showed a correlation between blood cadmium level and diastolic blood pressure proven by p value = 0,006. However, blood cadmium level was found to be not correlated with pulse rate (p = 0,074), systolic blood pressure (p = 0,359), and respiratory frequency (p = 0,655).

Conclusion : Blood cadmium level has significant correlation with diastolic blood pressure. But the correlation between blood cadmium level with systolic blood pressure, pulse rate and respiratory frequency not significant.

Keyword : blood cadmium level, cardiovascular, welding worker.