Perbedaan fungsi memori pekerja pengolah logam berdasarkan pajanan uap las = Difference of memory function in metal workers based on metal fume exposure / Afriyanti Wulandari

Afriyanti Wulandari, author

Abstrak

Background : Metal workers in Indonesia are susceptible to metal fume exposure. One of them is exposure to manganese and aluminum metal fumes that can increase the risk of decline in memory function. Nevertheless, the influence of metal exposure from welding fumes containing manganese and aluminum are still not conclusive. This study was conducted to determine differences in memory function between metal workers exposed and not exposed to metal fume. Methods : This research using a cross-sectional study design with a comparative analysis based on differences in exposure to welding fumes. Metal fume exposure is measured by the levels of manganese and aluminum in the air within work environment using Atomic Absorption Spectrophotometer (AAS) and in the blood using Inductive Coupled Plasma Mass Spectrometry (ICP-MS). Subject’s memory function were examined with Rey Osterrieth Complex Figure, the Beck Depression Inventory II, Digit Span Backward. Results : Manganese and aluminum levels are 0,00001 mg/m3 and 0,000016 mg/m3 and it below the threshold value of the environment nationwide. Median scores on memory function welding worker group is 23.75 (4-34) and non-welding workers was 19.5 (7-35) were not statistically different (p = 0.06). The memory function in the group of workers with blood manganese levels above normal {median 26 (4-34)} is higher than normal {median of 20 (5-35)} (p = 0.005). Conclusions : The differences of memory function is obtained in the group of workers by category of blood manganese levels. The median difference of memory function scores did not differ based on worker exposure to welding fumes.

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ABSTRACT

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