Indian Journal of Forensic Medicine and Toxicology
Volume 13, Issue 1, January-March 2019, Pages 326-331

Comparison of blood lead levels between oral and inhalation opium addicts and its relationship with hematological parameters

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Abstract

Background and objectives: The current study aimed at comparing the level of blood Pb in oral and inhalation opium addicts and its relationship with hematological parameters. Materials and method: For this purpose, a total of 166 patients (83 addicts as the case and 83 non-addicts as the control groups) were enrolled in the study. A venous blood sample was taken from all the subjects in order to determine the serum level of Pb, iron (Fe), and other hematological parameters. In addition, the clinical and demographic status of the subjects were recorded and analyzed using appropriate statistical methods. Results: Among the enrolled patients, 48 were oral and 35 were the inhalation opium consumers. Oral and inhalation opium addict groups had higher levels of blood Pb compared with the control group ($F = 131.13$, $P < 0.001$). There was no significant difference between oral and inhalation addict groups ($P > 0.05$). More investigations showed a negative relationship between the blood levels of Pb, and those of Fe, hemoglobin(HB), hematocrit (HCT), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), and positive relationship with red cell distribution width (RDW) ($P > 0.05$). Conclusion: The results showed that the serum level of Pb was associated with those of Fe and Hb in opium addicts in comparison with the controls. These changes had a significant effect on other hematological parameters in the case group in comparison with the control group. However, there was no significant relationship between different forms of opium use.