

ABSTRACT

Trace metals are imperative elements present in the human body. Their superfluity in the blood stream is responsible for various diseases. The determination of heavy metals in the biological samples of human beings is important for clinical screening purpose. The tannery workers are under constant threat of adverse health effects due to its excessive exposure. This study was conducted among the tannery workers of different localities, near Lahore. The levels of chromium, nickel, zinc, lead and cadmium were determined in different biological samples i.e. blood, hair and nails. The collection and preparation of samples were carried out using conventional protocols. A total of 90 samples including 70 blood samples, 10 hairs and 10 nail samples were collected from three tanneries i.e. Unique tanning industry, Shafi pvt Ltd. and Saddiq tanning industry. All the samples were of male workers. The concentration of heavy metals was determined using Flame Atomic Absorption Spectrophotometer (FAAS). T-test was applied to visualize variance within departments of manufacturing unit. The results showed that there was significant difference in levels of chromium in the cutting section while all the other departments showed no significant difference in their data. Moreover, t-test was applied to observe variance within biological samples. The results showed a significant difference between the values of blood and hair samples also among nail and hair samples but there was no significant difference found among the blood and nail samples. Hair samples showed varied results from both blood and nail samples but their results were significantly low.