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## Abstract

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### Relationship between blood metals and inflammation in taxi drivers.

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#### Abstract

**BACKGROUND:** Cardiovascular disease is a cause of concern in public health worldwide, reinforcing the need for studies related to the identification of potential agents that contribute to the inflammation process and atherosclerosis. This study aimed to evaluate whether metals are associated with inflammatory and kidney damage and could contribute to the atherosclerosis process.

**METHODS:** Blood metals, inflammatory markers, homocysteine, antioxidants and renal markers were measured in 42 taxi drivers and 27 controls (non-occupationally exposed).

**RESULTS:** Taxi drivers had increased Hg, As, Pb and Cd levels, however Cu and Zn levels were decreased compared to controls ( $p < 0.05$ ). Hg, As and Pb levels were positively associated with pro-inflammatory cytokines, nitric oxide and negatively associated with glutathione peroxidase. Moreover, Hg, As and Pb presented positive associations with homocysteine, an independent risk factor for atherosclerosis. Regarding markers of kidney function, N-acetyl-beta-d-glucosaminidase levels were increased in taxi drivers and correlated to inflammation markers.

**CONCLUSION:** Hg levels were found above the recommended limits in taxi drivers and both Hg and As levels showed associations with inflammatory process, oxidative status and homocysteine. Thus, chemical substances as Hg and As can be considered as additional contributors to the development of cardiovascular diseases.

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**KEYWORDS:** Homocysteine; Inflammation markers; Occupational exposure; Toxic metals

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