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[Asian Pac J Cancer Prev](#). 2011;12(2):447-51.

Trace elements, heavy metals and other biochemical parameters in malignant glioma patients.

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Abstract

Aim: We aimed to assess relevance of mineral, trace element and heavy metal levels in patients with malignant gliomas. **Methods:** In this study, erythrocyte catalase (CAT), and carbonic anhydrase (CA), serum copper (Cu.), zinc (Zn), lead (Pb), iron (Fe), cadmium (Cd), cobalt (Co), manganese (Mn), and magnesium (Mg) levels were measured in 22 healthy humans and 22 malignant glioma patients. Metal concentrations were assessed by atomic adsorption spectrophotometry, while biochemical methods were used for CAT and CA. **Results:** The Cd, Fe, Mg, Mn, Pb and Zn levels were significantly elevated in the patients as a whole compared to controls ($P < 0.05$), while Cu was decreased and Co demonstrated no change. Although mean CAT activity were significantly lowered, CA exhibited significant increase. **Conclusions:** The results of the current study indicate that antioxidant enzymes may have a role in the genesis of considerable oxidative stress in patients with malignant glioma. CAT and CA seem to play particular roles in the pathophysiology of this disease.

PMID: 21545211 [PubMed - in process]