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Evaluation of serum levels of cadmium and lead in occupationally exposed painters with administration of probiotic *(lactobacillus pentosus kca 1)* supplemented yogurt: A pilot study

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Abstract

Cadmium and Lead are extremely toxic metals found in industrial workplaces. They are also found in some industrial paints and may represent hazards when sprayed." It interferes with the development of the nervous system and particularly toxic to children. Occupational exposure is a common cause of cadmium and lead poisoning in adults. Probiotics are live microorganisms which when administered in adequate amounts confer a health benefit on the host". Probiotics are commonly consumed as part of fermented foods with specially added active live cultures; such as in yogurt. *Lactobacillius pentosus KCA1* used in this study is a recently discovered and sequenced lactobacilli of probiotic strain with a potential for detoxification of heavy metals. Serum levels of Lead and Cadmium were determined in thirty professional painters and ten non painters as control using Atomic absorption spectrophotometer (AAS Model SOLAAR 969 UNICAM series). Probiotic supplemented yogurt was administered to the occupationally exposed painters and its effect on serum levels on Cadmium and Lead were also determined.The results obtained show that mean± standard error of mean (S.E.M.) of serum levels of Cadmium (0.012±0.01ppm/L) and Lead (0.025±0.003ppm/L) were higher in painters and significantly different compared with values obtained in non painters (controls); (0.005±0.002 ppm/L) and (0.02±0.01 ppm/L) for Cadmium and Lead respectively; ($p<0.05$). Mean serum level of Lead in the painters after administration of probiotic supplemented yogurt (0.008±0.002 ppm/L) was significantly reduced compared with levels before administration of the yogurt (0.025±0.003ppm/l); ($p<0.001$). From this study, serum level of Cadmium and Lead were reduced in occupationally exposed painters by probiotics (*Lactobacillus pentosus* KCA1) which was prepared in form of yogurt. Comparatively, serum Lead levels were more significantly reduced than Cadmium levels in the occupationally exposed painters.

Biography

Osadolor H B has completed his PhD at the age of 40 years from University of Benin. He is a senior lecturer and currently head of department of medical laboratory science, University of Benin, Nigeria. He has over 30 papers in reputed journals including PubMed.