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Chronic Renal Failure Associated with Heavy Metal Contamination of Drinking Water in Hail, Kingdom of Saudi Arabia

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Abstract : The main threats to human health from heavy metals are associated with exposure to Pb, Cd, Cu, Mo, Zn, Ni, Mn Co and Cr. is mainly via intake of drinking water being the most important source in most populations. These metals have been extensively studied and their effects on human health regularly reviewed by international bodies such as the WHO. Heavy metals have been used by humans for thousands of years. Although several adverse health effects of heavy metals have been known for a long time, exposure to heavy metals continues, and is even increasing in some parts of the world, in particular in less developed countries, though emissions have declined in most developed countries over the last 100 years. A strong relationship between contaminated drinking water with heavy metals from some of the stations of water shopping in Hail, KSA and chronic diseases such as renal failure, liver cirrhosis, and chronic anemia has been identified in this study. These diseases are apparently related to contaminant drinking water with heavy metals such as Pb, Cd, Cu, Mo, Zn, Ni, Mn Co and Cr. Renal failure is related to contaminate drinking water with lead and cadmium, liver cirrhosis to copper and molybdenum, and chronic anemia to copper and cadmium. Recent data indicate that adverse health effects of cadmium exposure may occur at lower exposure levels than previously anticipated, primarily in the form of kidney damage but possibly also bone effects and fractures. The general population is primarily exposed to mercury via drinking water being a major source of methyl mercury exposure, and dental amalgam. During the last century lead, cadmium, zinc, iron and arsenic is mainly via intake of drinking water being the most important source in most populations. Long-term exposure to lead, cadmium, zinc, iron and arsenic in drinking-water is mainly related to primarily in the form of kidney damage. Studies of these diseases suggest that abnormal incidence in specific areas is related to toxic materials in the groundwater and thereby led to the contamination of drinking water in these areas.

Keywords : heavy metals, liver functions, kidney functions and chronic renal failure, hail, renal, water
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