Groundwater pollution and Liver pathology

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ABSTRACT

Background: Several diseases have caused by contamination of surface and groundwater.
Aim of the work is to investigate the impact of iron overload in drinking water on liver pathology. Materials and Methods: Samples of drinking water, blood and true cut liver biopsies taken from selected inhabitants. Those inhabitants were suffering from liver disorders. Samples of water, blood and true cut liver biopsies after having informed consent taken and undergone for determination of iron level. Measurement of iron level in water samples was carried out in duplicate with the use of GBC atomic absorption spectrophotometer, Taco company (Australia). Analyzed for serum iron level with a micro lab 200 spectrophotometer by using Iron-B kit, Biocon company (Germany). Results: the mean value of iron in groundwater samples is higher than those permissible limits and then those of surface drinking water. Comparison between iron level in drinking water and human blood samples shows positive relationship. The patient group that depended on drinking groundwater had abnormal values in liver function tests. These data suggest that the polluted iron drinking water is the reason for the liver disorder of the patients. Siderosis was apparent among those patients drinking polluted iron water in comparison to control cases. The siderosis appears to be responsible for resistance to treatment of HCV and progression of fibrosis.
Conclusion; The accumulation of iron in liver leads to fibrosis. Iron depletion therapy could interfere with fibrosis development and possibly reduce the risk of hepatocellular carcinoma (HCC).
Keywords; Water, blood, liver, Iron

Biography

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