Int J High Dilution Res 2012; 11(40):150-151
Proceedings of the XXVI GIRI Symposium; 2012 Sep20-22; Florence (Italy)

Oral Section

Summary of four scientific studies on Arsenicum album high dilution effect against Arsenic intoxication in mice

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ABSTRACT

Background: Groundwater arsenic affects millions of people in about 20 countries. In West Bengal (India) and Bangladesh alone over 100 million people are exposed. The arsenic concentration in contaminated groundwater in Bangladesh was above the maximum permissible level of 0.05 mg/l as recommended by WHO for developing countries [1]. Drinking water is not the only source of poisoning. In arsenic contaminated areas, crops, vegetables, cereals, poultry, cattle, etc, also contain traces of arsenic. Chronic arsenic intoxication has been associated with several diseases such as melanosis, leuco-melanosis, hyperkeratosis, oedema, skin cancer…

Cazin et al [2], have demonstrated the effect of high dilutions of arsenic compounds. They noted increased arsenic elimination from blood through urine and faeces in intoxicated rats. According to these research, the aim of Khuda Buksh studies [3-4-5] was to investigate whether high dilution Arsenicum album have any effect on arsenic accumulation in different tissues and to understand also how this high dilution could produce a protective effect on all the different organs.

Methodology: Firstly, the effect of Arsenicum album 30 cH on the amount of arsenic accumulation was determined by spectrophotometric analysis in four tissues namely liver, kidney and testis in mice intoxicated by arsenic. The protective effect in chronic and acute arsenic intoxicated mice of Arsenicum Album 6cH, 30cH and 200cH has been evaluated using not only the activities of enzymatic and biomarker toxicity (aspartate amino transferase (AST), alanine amino transferase (ALT), acid phosphatase (AcP), alkaline phosphatase (AlkP), lipid peroxidation (LPO) and reduced glutathione (GSH)) but also the cytogenetical parameters (chromosome aberrations (CA), mitotic index (MI), sperm head anomaly (SHA) etc.,). Because, it is well demonstrated that these enzymes biomarkers reflect the degree of hepatotoxicity and oxidative stress caused by arsenic intoxication.

Results: Compared to controls, Arsenicum album 30cH induced a significant decrease in accumulation of arsenic in 4 tissues namely liver, spleen, kidney and testis in intoxicated mice. In addition, both Arsenicum album 6cH, 30cH and 200cH reduced chromosome aberrations, sperm head abnormality frequencies and activities of acid and alkaline phosphatases, aspartate and alanine aminotransferases and lipid peroxidation, while mitotic index and activities of glutathione, catalase and succinate dehydrogenase were increased compared to controls.

Conclusion: Altogether, these results provide evidence of protective potentials of the Arsenicum album dilution against acute and chronic arsenic intoxication in mice. They also offer a new hypothesis that the

https://doi.org/10.51910/ijhdr.v11i40.606

mechanism of the homeopathic dilution could act through regulation of expression of certain genes. This explanation seems to be plausible because all biomarker tests are regulated by specific genetic regulatory mechanisms [6].

keywords: Arsenicum album, arsenic intoxication, enzymatic and biomarker toxicity.

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Support: authors declare that this study received funding from Boiron
Conflict of interest: authors declare there is no conflict of interest
Received: 01 June 2012; Revised: 09 August 2012; Published: 30 September 2012.
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How to cite this article: Boujedaini N, Terzan L, Khuda-Bukhsh AR. Summary of four scientific studies on Arsenicum album high dilution effect against Arsenic intoxication in mice. Int J High Dilution Res [online]. 2012 [cited YYYY Month dd]; 11(40):150-151. Proceedings of the XXVI GIRI Symposium; 2012 Sep 20-22; Florence (Italy). GIRI; 2012; Available from: http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/view/606/584

https://doi.org/10.51910/ijhdr.v11i40.606