Bahrain Medical Bulletin, Vol. 37, No. 2, June 2015

Environmental Neurotoxicology: A review

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Industry in the Kingdom of Saudi Arabia (KSA), making use of the amassed income from oil production, is showing phenomenal development and diversification in industrial products that have no match in the region. Chemical use in industry is on the rise worldwide and KSA is the main user and producer of chemicals (organic and inorganic compounds) in the Gulf region. A good number of chemicals, which may be the form of gas, liquid, or solid state, are neurotoxic causing poisoning, birth defects, severe illness, or even death.

Toxicity sometimes arises from the metabolite and not from the parent chemical. In this review, we have briefly discussed the symptoms, signs, diagnosis, management, and prevention of toxicity of various groups of neurotoxic chemicals which are most likely found in Saudi industry. The clinical features of neurotoxicity depend on several factors, such as the physical characteristics of the chemical, the route of entry, the dose and susceptibility of the exposed individual. Investigations depend on the type of the toxic agent. These range from measuring the toxic chemical or its metabolites in biological samples, electro-physiological and laboratory investigations or nerve biopsy. Management depends on the poisoning agent and the presenting symptoms and signs. Intensive care might be required for acutely intoxicated patients. Preventing occupational diseases, in general, requires joint efforts between governments, industry and employees. Elimination is the key to prevention with the use of personal protective clothing as the last resort.

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