

عنوان مقاله:

Teratogenic Effects of Sulfur Mustard on Mice Fetuses

محل انتشار:

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خلاصه مقاله:

Sulfur Mustard (SM) has been used as a chemical warfare agent, in the World War I and more recently during Iraq-Iran war in early ۱۹۸۰s'. Its biological poisoning effect could be local or systemic and its effect depends on environmental conditions, exposed organs, and the extent and duration of exposure. It is considered as a strong alkylating agent with known mutagenic, carcinogenic effects; although a few studies have been performed on its teratogenicity so far. Materials and Methods Mice were administered with SM intraperitoneally with a dose of ۰.۷۵ and ۱.۵ mg/kg in different periods of their gestation (gestational age of ۱۱, ۱۳ and ۱۴ weeks). Control mice groups were included. Between ۵ and ۹ mice were used in each group. Dams underwent cesarean section on day ۱۹ of their gestation. External examination was performed on the animals investigating craniofacial and septal defects and limb malformations such as adactyly and syndactyly. All data were analyzed by Chi-Square test and Fisher's exact test. The P- value less than ۰.۰۵ was considered significant. Results Craniofacial and septal defects as well as the limb malformations were the most common types of birth defects, displaying an extremely complex biomedical problem. Conclusion This study confirms a significant correlation between SM exposure and its teratogenic effect. We postulated that the malformations could be caused by an uncontrolled migration of neural crest cells, causing developmental disorders. In addition to environmental factors, modifying genes could play an important role in the pathogenesis of the defects.

کلمات کلیدی:

Malformation, Sulfur mustard, Teratogenicity

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