<<军事毒理学>>

图书基本信息

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内容概要

Military toxicology, evolved from the needs of medical supports during the first and the second World War and developed during the later stage of 20 centuries, becomes a division of military medicine. It is designed to solve both academic and practical problems for a medical treatment system of the troops' chemical defense and security in peace and war. It plays a major role in the toxicological assessment of health and environmental hazards associated with substances that are usedprimarily by the military or that present an unusual type of exposure as a result of a unique military environment. It deals with the way that substances are absorbed, distributed or eliminated and studies the mechanism of a xenobiotic-induced intoxication. And it can even identify poisonous and hazardous chemicals from different sources such as air, soil, fruits, waters, urine or blood. As a classroom discipline it is to train the students for a wide range of toxicological issues so that the students may work under supervision of researchers in emergency medicine or participate in an active research project. Although there are some excellent references in toxicology, a textbook systematically elaborating the theoretical and practical problems encountered in military operations is not available until now. This void impelled the authors to produce the present textbook for students in military medical colleges and research institutes. The first edition of Military Toxicology provides both basic and practical information on the many facets of toxicology and especially on the principles, concepts and modes of thought that are the foundation of the discipline. It also reflects the progress made in defenses of chemical agents and even in chemical hazard management. Graduate students and researchers will find this book an excellent reference when approaching problems encountered in areas of military medicine or peripheral interests.

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书籍目录

章节摘录

插图：Whole-body radiation exposure has been shown to produce a dose-dependent decrease in thepseudocholinesterase activity of the ilia of both rats and mice, and there are some changes in theresponse of the irradiated rat intestine to drugs such as acetylcholine and physostigmine. However,there is no significant change in the acute toxicity of the cholinergic carbamate or organophosphateinsecticides in animals given lethal exposures of whole-body ionizing radiation and there is also noapparent change in the antidotal efficacy of atropine in such animals.During the period when released histamine was considered to be responsible for some of the toxic effects of radiation exposure, attempts were made to demonstrate changes in the response ofirradiated animals to injected histamine; and it appeared, at least in certain strains of mice, thatsuch differences could be demonstrated and that these changes could be antagonized by the use ofantihistamines.Another group of drugs which radiation exposure appears to produce a significant change inresponse is the CNS stimulants. The toxicity of both amphetamine and pentyleneletrazol is increasedin irradiated animals, whereas that of pentobarbital, chloralose, and other CNS depressants isdecreased. This decrease in toxicity can be produced by irradiation of the head only which suggeststhat the mechanism responsible for this effect is a faster entry into the brain and a region-specificsensitization phenomenon.Many of the effects that have been demonstrated with ionizing radiation could also be producedunder the proper experimental conditions by ultraviolet radiation, although there is even lessexperimental data here than exists on the effects of ionizing radiation. A somewhat different type ofresponse is that of erythema and liver necrosis produced with methoxypsoralen in mice exposed toultraviolet light. Diurnal variations have been detected in the acute toxicity of several compoundsand, although most of these are probably related to hormonal factors, it is possible to alter some ofthese responses by changing the light-dark exposure cycles. Variations in the length of day have alsobeen suggested as a cause of some of the seasonal variations that have been observed in the toxicityof some drugs and chemical agents.

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