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HYDROFLUORIC ACID: THE NEXT TERRORIST WEAPON? PREPARING YOURSELF AND YOUR TEAM

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Statement of the problem: Hydrofluoric Acid (HFA) is an agent whose components' action upon human tissue is unique among hazardous agents. This ubiquitous chemical destroys skin, fascia, muscle, and bone. The fluoride anion attaches with the body's calcium creating the potential for hypocalcemia, tetany and death in minutes if countermeasures are not instituted immediately. Calcium in all of its iterations is the antidote of choice. However, as much as HFA is a clear and present danger, knowledge of the agent, its clinical manifestations, and the therapeutic options are not taught among the medical and nursing specialties. This presentation serves to discuss HFA, demonstrate the use of high-fidelity simulators to reinforce education, and present an HFA mass casualty table-top exercise.

Methodology & Theoretical Orientation: A primer on HFA was available to the learner. Afterwards, an HFA case scenario was developed and the learner was challenged to deliver appropriate care at the scene of the exposure and in the emergency department. Emphasis was placed on the proper utilization of antidotes. The final stage is a table-top exercise dealing with multiple victims of an intentional attack and the efficient triage use of the various therapeutic choices based upon the initial triage of the victims.

Findings: Learners have acknowledged that the use of high-fidelity simulations reinforced their traditional education of uncommon but life-threatening medical conditions such as HFA exposure. The addition of a mass casualty event was purposely created to address terrorism and the need of emergency nurses and physicians to act quickly and competently to utilize resources efficaciously and save lives.

Conclusion & Significance: HFA is a unique hazardous agent that has not achieved the proper recognition as a potential agent of terror. The use of case simulations and table-top exercises can resolve that issue efficiently and entertainingly.

Biography

Paul Rega has been an Emergency Physician for over thirty years and has been board-certified in Emergency Medicine and Pediatric Emergency Medicine until his retirement. At present, his activities have been concentrated in education and research at The University of Toledo College of Medicine where he is an Assistant Professor in both the Department of Public Health & Preventive Medicine and the Department of Emergency Medicine. He currently has a number of semester courses relating to pandemics, global health, and disasters. Virtually all of his educational endeavors are multidisciplinary in nature (Medicine, Nursing, PA, Pharmacology, and Public Health) and he makes extensive use of simulation (table-top and functional exercises, high-fidelity simulations, hybrid simulations, etc.). His association with the university has also resulted in a number of publications in peer-reviewed journals and grants associated with disaster medicine, simulation medicine, and pandemic preparedness and response.

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