QuikClot Combat Gauze for Hemorrhage Control

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Z-Medica Corporation, the maker of QuikClot® Combat Gauze,™ would like to respectfully respond to the letter[1] from Professors Kalantar Motamedi and Masoud Sagafinia, who recently offered their comments to "QuikClot Combat Gauze Use for Hemorrhage Control in Military Trauma,"[2] the study by Dr. Ran et al published in the November-December 2010 issue of *Prehospital and Disaster Medicine*.

1. The main ingredient of Combat Gauze is kaolin, an inert mineral that has been known for decades to promote clotting via a process called "contact activation." Kaolin does not cause water absorption and concentration of clotting factors, but rather directly interacts with Factor XII, the first protein of the intrinsic pathway of the clotting cascade. The result of this interaction is the activation of the clotting cascade, which results in a much faster clotting process.[3]
2. Combat Gauze is made of non-woven surgical gauze impregnated with kaolin. It is designed to be safe and effective, and easy to use. It should also be very easy to remove from a treated wound, although sometimes irrigation might be helpful.
3. Combat Gauze is very effective in controlling bleeding from large vessels, both venous and arterial, when used in combination with manual compression. In fact, it was tested by both the United States Navy and the United States Army in a model of vascular injury to the femoral artery and vein. This testing led to the United States military choosing Combat Gauze as the only approved hemostatic agent for all the United States Armed forces. Since 2008, Combat Gauze has been deployed to the war theater by the United States military, with many reported uses showing a unique efficacy in controlling both venous and arterial bleeding.[3,4] In addition, products directly derived from Combat Gauze, also made of surgical gauze and kaolin, have been used in civilian medicine for several years. Several clinical trials have been conducted in the field of Interventional Cardiology, both at the femoral and radial artery level, using catheters of large sizes up to 12 French. Results show that the kaolin-based products can quickly and safely control bleeding from vascular access intervention.[5,6]
4. Kaolin's safety profile is well known: it has been evaluated by both WHO and the cosmetic industry and found to be safe.[7]

Z-Medica has shipped over 3.5 million units of Combat Gauze without one report of an adverse reaction, and there are no known contraindications to date. Currently, Combat Gauze is the only product authorized by the Committee on Tactical Combat Casualty Care as the first line treatment for life-threatening hemorrhage. I appreciate the opportunity to kindly respond to the well-thought-out comments from our colleagues at Baqiyatallah University of Medical Sciences.

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