

Letter to Editor

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From Battlefield to Bedside: Traumagel, A Revolutionary FDA-Approved Newly Introduced Hemostatic Agent by Cresilon Set to Transform Emergency Medicine and Trauma Care

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Abstract

The recent FDA approval of Traumagel, a groundbreaking hemostatic agent developed by Cresilon, marks a significant milestone in emergency medicine and trauma care. Traumagel, a plant-based hydrogel, is designed to control severe bleeding within seconds when applied directly to wounds. Originally developed for military use, this versatile gel is now set to revolutionize medical responses in both battlefield and civilian settings. Its rapid action and ease of use make it an invaluable tool for first responders, potentially saving countless lives by providing immediate hemorrhage control. The approval of Traumagel underscores the potential of innovative medical technologies to bridge the gap between advanced research and practical, life-saving applications.

Keywords: trauma gel; trauma care; injury; surgery

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Traumatic injury is one of the major factors leading to mortality among children and adults under 45 even surpassing the notorious cancer and cardiovascular diseases in major parts of the world [1]. On average, around every 3 minutes, a person dies from injury and hemorrhage accounting for 40% of trauma related deaths. As of 19 June 2024, according to World Health Organization (WHO), injuries, including both intentional and unintentional, result in 4.4 million deaths worldwide annually making a total of 8% of total global fatalities [2]. According to a press release from Cresilon, significant bleeding and its consequences are responsible for 40% of gunshot or massive injury deaths and preventable hemorrhage is the cause of 91% of the battlefield mortality. Around 1.5 million people die worldwide annually due to post-traumatic bleeding [3,4].

To combat this high mortality, continuous efforts have been made in human history to control hemorrhage effectively and efficiently. Owing to the continuity of these attempts, FDA has just approved a drug-loaded device named "Traumagel" capable of stopping serious bleeding in seconds. The device is a 30-milliliter syringe loaded with a hemostatic gel made of algae and fungi that, according to Fast Company, has the feel and color of hummus. Upon

simply applying the solution to a wound, first responders can quickly stop bleeding [4].

A special combination of polyanionic and polycationic polysaccharides makes up Traumagel. The main polyanionic polymer is sodium alginate, while the main polycationic polymer is poly N-acetyl-D-glucosamine. Poly N-acetyl-D glucosamine particles are equally disseminated in a hydrogel formed by sodium alginate. The hemostatic gel sticks to the wound site quickly when administered directly to the source of bleeding. Hemostatic gel creates a physical barrier that halts bleeding and permits the body to build a spontaneous clot [5].

Traumagel stands out from previously existing hemostatic strategies like the application of gauze or tourniquet [4]. Historically, tourniquets have been found in association with compromise of blood supply to extremities which can lead to ischemic changes and even nerve damage. Gauze demonstrates effective properties in body fluid absorption but it has a tendency to adhere to the wound site and thus it leads to discomfort and hinders wound healing [6]. Joe Landolina, Cresilon's founder, highlights Traumagel benefits by saying that traditional gauze requires packing of the wound to reach the bleeding site is not only painful for the victims of gunshot wounds but also hazardous for medical professionals by exposing them shards of bone and shrapnel.

Traumagel exhibits instant results without requiring manual pressure and its flowable nature enhances safety in treating gunshot injuries [3].

In conclusion, Traumagel appears to have a promising effect in injuries and acute emergency care where potentially preventable hemorrhage and non-compressible bleeding are required to be controlled in seconds saving the life of the injured ones. This could be extremely significant in civilians and military circumstances where massive exsanguination leads to high mortality. Now after FDA approval of Traumagel, Care of trauma patients can be miraculously enhanced if we pay attention to the training of health care workers for its use and making the availability of this product worldwide.

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