SAFE AND EFFECTIVE USE OF KAOLIN BASED HEMOSTATIC AGENT* IN WOUND AND OSTOMY CARE

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The Problem

Management of acute hemorrhage in both the in-patient, out-patient and home care settings is a serious safety issue. Other than holding pressure, which may not be sufficient in a variety of situations, clinicians are often not educated in the management of serious bleeding events, putting the patient at risk of further harm.

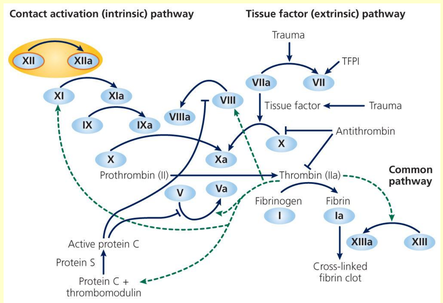
Subjects and Setting

To examine the use of a safe, efficacious, kaolin-based hemostatic agent for the management of acute hemorrhage as compared to existing cautery based or cellulose based products.

Methods

A case series approach will demonstrate the benefit and wide range of uses a kaolin-based hemostatic agent can provide clinicians across the care continuum ranging from use in damage control surgery of the abdomen, palliative care, ostomy care, negative pressure wound therapy, interventional procedures and routine wound care. The benefit of the product will be examined as it relates to access to the product by non-medical clinicians and lay care givers, its cost effectiveness and ease of use.

Mode of Action



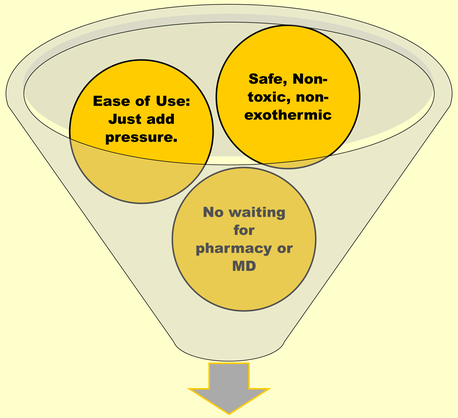
Kaolin actives the intrinsic clotting pathway by:

- **Activation of clotting factor XII which then activates clotting factor XI leading to a fibrin clot.**
- **Promotes activation of platelet associated factor XI initiating the intrinsic clotting pathway.**
- **Allows for hemostatic control in patients with clotting factor deficiencies or on medications such as anticoagulants which alter various aspects of the clotting cascade.**

Results

Kaolin-based hemostatic agents can be deployed quickly in a variety of situations through improved access and ease of use, compared to typical pharmacy controlled hemostatic agents. Kaolin impregnated gauze is more cost effective, does not obscure the wound bed via the result of residual product adherence and stops bleeding without the need of chemical cautery which can damage healthy tissue. The ease of use and low side effect profile of these products allow for safe delivery of wound care, effective debridement with subsequent control of bleeding, and immediate response of clinicians and care givers to unexpected bleeding events.

MILITARY STRONG… OVER THE COUNTER SAFE.



SAFE, EFFICACIOUS and COST EFFECTIVE RESPONSE TO BLEEDING [1-5].

References:

1. Chávez-Delgado ME, Kishi-Sutto CV, Albores de la-Riva XN, Rosales-Cortes M, Gamboa-Sánchez, P. Topic usage of kaolin-impregnated gauze as a hemostatic in tonsillectomy. *J Surg Res*, 2014; doi:10.1016/jss.2014.05.040 [epub ahead of print]
2. Kheriabadi BS, Scherer MR, Estep JS, Dubick MA, Holcomb JB. Determination of efficacy of new hemostatic dressings in a model of extremity arterial hemorrhage in swine. *J Trauma* 2009; 67(3): 450-9.
3. Gegel BT, Austin PN, Johnson AD. An evidence-based review of the use of combat gauze (QuikClot) for hemorrhage control. *AANA J*, 2013; 81(6): 453-8.
4. Gebauer S, Hoopes D, Finlay E. From the battlefield to the palliative care arsenal: application of Quickclot Combat Gauze for aggressive palliation of hemorrhagic shock in the setting of end-stage liver disease-associated compartment syndrome. *J Pain Symptom Manage* 2013; 46(4): e6-8.
5. Tactical combat casualty care guidelines. Committee on Tactical Combat Casualty Care, Journal of Special Operations Medicine 2008; 8-42-6.
6. Sena MJ, Larson S, Piovesan N, Vercruyssee G. Surgical application of kaolin-impregnated gauze (Combat Gauze) in severe hemorrhagic gastritis. *AM Surg* 2010; 76(7): 774-5.

***QuikClot: Z-Medica, Wallingord, CT.**

DEBRIDEMENT

Our WOCN Team Provides a Variety of Debridement Options:

- **Sharp debridement (scalpel, curette)**
- **Hydrosonic Debridement (Qoustic Wound Therapy, Arobella) and Non-contact ultrasound debridement (MIST, Celleration)**
- **Microfiber Debridement (Debrisoft)**

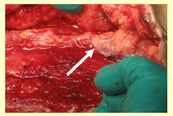
Kaolin Impregnated Gauze allows for control of post-debridement bleeding without cautery or increased pain for the patient. Team carries product on-hand for use in acute care and outpatient settings.

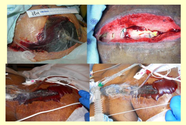
NEGATIVE PRESSURE WOUND THERAPY

NPWT Dressing Changes Are Associated with Serious Bleeding Events Due To:

- **Mechanical trauma from dressing removal and incorporation of granulation tissue.**
- **Placement of packing materials over vessels or grafts.**
- **Use of anticoagulant medications in patients with NPWT.**

Kaolin impregnated gauze allows for immediate response to unanticipated bleeding events during dressing change and allows for NPWT reapplication once bleeding is controlled.



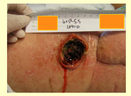


OSTOMY CARE

Control serious bleeding in cases of caput medusa, following trauma, or continuous oozing/bleeding in anticoagulated patients. Kaolin impregnated gauze has been shown to be safe when used against gastric mucosa.[6]

PALLIATIVE CARE

Recently, use of kaolin impregnated gauze facilitated the discharge of a patient with persistent bleeding from a fungating tumor. Traditional use of silver nitrate was ineffective and painful. The patient's family was scared to bring the patient home due to the inability to control significant bleeding episodes. Teaching family the simple steps of using kaolin impregnated gauze allowed for safe and confident discharge to home. This has recently been supported by other practitioners. [4]



Conclusion

Kaolin impregnated gauze is a safe, non-toxic, non-exothermic tool for the control of bleeding events during wound and ostomy care. The product can be utilized quickly by a variety of clinicians and lay caregivers.

VCU WOCNs MAKE A DIFFERENCE