

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Hemostatic Gauze for Wound Care: Clinical Effectiveness and Cost- Effectiveness

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Research Questions

1. What is the clinical effectiveness of hemostatic gauze with kaolin for patients requiring wound care?
2. What is the clinical effectiveness of hemostatic gauze with chitosan for patients requiring wound care?
3. What is the cost-effectiveness of hemostatic gauze with kaolin for patients requiring wound care?
4. What is the cost-effectiveness of hemostatic gauze with chitosan for patients requiring wound care?

Key Findings

Two systematic reviews were identified regarding the clinical effectiveness of hemostatic gauze for patients requiring wound care. No evidence regarding the cost-effectiveness of hemostatic gauze was identified.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were hemostatic gauze composed of chitosan and kaolin, and wound care. Filters were applied to limit the retrieval health technology assessments, systematic reviews, and meta analyses, randomized controlled trials, economic studies, and non-randomized studies. The search was also limited to English language documents published between January 1, 2015 and March 30, 2020. Internet links are provided where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Patients of any age requiring internal or external wound care
Intervention	Q1 & Q3: Hemostatic gauze impregnated or coated with kaolin Q2 & Q4: Hemostatic gauze impregnated or coated with chitosan; Hemostatic gauze made from chitosan
Comparator	Q1 & Q3: Hemostatic gauze impregnated or coated with chitosan; Hemostatic gauze made from chitosan Q2 & Q4: Alternative types of chitosan hemostatic gauze
Outcomes	Q1 & Q2: Clinical effectiveness (e.g., cessation of bleeding, survival, time to stop bleeding, blood loss) and safety (e.g., burns, infections) Q3 & Q4: Cost-effectiveness (e.g., cost per benefit gained)
Study Designs	Health technology assessments, systematic reviews, randomized controlled trials, non-randomized studies, and economic evaluations

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessments and systematic reviews are presented first. These are followed by randomized controlled trials, non-randomized studies, and economic evaluations.

Two systematic reviews¹⁻² were identified regarding the clinical effectiveness of hemostatic gauze for patients requiring wound care. No relevant health technology assessments, randomized controlled trials, non-randomized studies, or economic evaluations were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified.

Systematic Reviews and Meta-Analyses

1. Welch M, Barratt J, Peters A, Wright C. Systematic review of prehospital haemostatic dressings. *J R Army Med Corps*. 2019 Feb 2.
[PubMed: PM30711924](#)
2. Boulton AJ, Lewis CT, Naumann DN, Midwinter MJ. Prehospital haemostatic dressings for trauma: a systematic review. *Emerg Med J*. 2018 Jul;35(7):449-457.
[PubMed: PM29728411](#)

Randomized Controlled Trials

No literature identified.

Non-Randomized Studies

No literature identified.

Economic Evaluations

No literature identified.

Appendix — Further Information

Systematic Reviews and Meta-Analyses

Unclear Comparator

- Liu J, Zeng Q, Ke X, Yang Y, Hu G, Zhang X. Influence of Chitosan-based dressing on prevention of synechia and wound healing after endoscopic sinus surgery: a meta-analysis. *Am J Rhinol Allergy*. 2017 Nov 4;31(6):401-405.
[PubMed: PM29122085](#)

Randomized Controlled Trials

Alternative Comparator — Cellulose-based Hemostatic Agent

- Efeoglu C, Sipahi Calis A, Karasu Z, Koca H, Boyacioglu H. Prospective randomized single-blind study of post-operative bleeding after minor oral surgery in patients with cirrhosis. *Turk J Gastroenterol*. 2019 Feb;30(2):171-176.
[PubMed: PM30457557](#)

Alternative Comparator — Collagen-based Hemostatic Agent

- Pippi R, Santoro M, Cafolla A. The Use of a Chitosan-derived hemostatic agent for postextraction bleeding control in patients on antiplatelet treatment. *J Oral Maxillofac Surg*. 2017 Jun;75(6):1118-1123.
[PubMed: PM28189659](#)

Alternative Comparator — Hydrocolloid Dressing

- Halim AS, Nor FM, Mat Saad AZ, Mohd Nasir NA, Norsa'adah B, Ujang Z. Efficacy of Chitosan derivative films versus hydrocolloid dressing on superficial wounds. *J Taibah Univ Med Sci*. 2018 Dec;13(6):512-520.
[PubMed: PM31435371](#)

Alternative Comparator — Standard Gauze

- Hwang YG, Lee JW, Won EA, Han SH. Prospective randomized controlled study of hemostatic efficacy with kaolin-impregnated dressings in diabetic foot ulcers taking anticoagulants undergoing debridement in an outpatient clinic. *J Diabetes Res*. 2019 Nov;2019:9316380.
[PubMed: PM31828170](#)
- Kabeer M, Venugopalan PP, Subhash VC. Pre-hospital hemorrhagic control effectiveness of Axiostat® dressing versus conventional method in acute hemorrhage due to trauma. *Cureus*. 2019 Aug 29;11(8):e5527.
[PubMed: PM31687302](#)

9. Noh JH, Lee JW, Nam YJ, Choi KY. Is intraoperative use of QuikClot combat gauze effective for hemostasis after total knee arthroplasty? *Clin Orthop Surg*. 2017 Mar;9(1):43-49.
[PubMed: PM28261426](#)
10. Dilokhuttakarn T, Vilai P, Rungsinaporn V. The efficacy of Chitosan dressing in reducing blood loss for harvest site in split thickness skin graft: a randomized control trial. *J Med Assoc Thai*. 2016 Nov;99 Suppl 8:S19-s24.
[PubMed: PM29901373](#)
11. Kondapalli SS, Czyz CN, Stacey AW, Cahill KV, Foster JA. Use of Kaolin-impregnated gauze for improvement of intraoperative hemostasis and postoperative wound healing in blepharoplasty. *J Clin Aesthet Dermatol*. 2016 Jun;9(6):51-55.
[PubMed: PM27386052](#)
12. Hatamabadi HR, Asayesh Zarchi F, Kariman H, Arhami Dolatabadi A, Tabatabaey A, Amini A. Celox-coated gauze for the treatment of civilian penetrating trauma: a randomized clinical trial. *Trauma Mon*. 2015 Feb;20(1):e23862.
[PubMed: PM25825701](#)
13. Mo X, Cen J, Gibson E, Wang R, Percival SL. An open multicenter comparative randomized clinical study on Chitosan. *Wound Repair Regen*. 2015 Jul-Aug;23(4):518-524.
[PubMed: PM25845544](#)

Non-Randomized Studies

Alternative Comparator

14. Gupta A, Rattan V, Rai S. Efficacy of Chitosan in promoting wound healing in extraction socket: a prospective study. *J Oral Biol Craniofac Res*. 2019 Jan-Mar;9(1):91-95.
[PubMed: PM30456164](#)
15. Winstanley M, Smith JE, Wright C. Catastrophic haemorrhage in military major trauma patients: a retrospective database analysis of haemostatic agents used on the battlefield. *J R Army Med Corps*. 2019 Dec;165(6):405-409.
[PubMed: PM30287682](#)
16. Choron RL, Hazelton JP, Hunter K, et al. Intra-abdominal packing with laparotomy pads and QuikClot during damage control laparotomy: a safety analysis. *Injury*. 2017 Jan;48(1):158-164.
[PubMed: PM27469399](#)

Alternative Outcomes

17. Bar J, David A, Khader T, Mulcare M, Tedeschi C. Assessing coagulation by Rotational Thromboelastometry (ROTEM) in rivaroxaban-anticoagulated blood using hemostatic agents. *Prehosp Disaster Med*. 2017 Oct;32(5):580-587.
[PubMed: PM28625215](#)

Unclear Comparator

18. Shinkawa T, Holloway J, Tang X, Gossett JM, Imamura M. Experience Using Kaolin-impregnated sponge to minimize perioperative bleeding in Norwood operation. *World J Pediatr Congenit Heart Surg*. 2017 Jul;8(4):475-479.
[PubMed: PM28696876](#)

Review Articles

19. Peng HT. Hemostatic agents for prehospital hemorrhage control: a narrative review. *Military Med Res*. 2020 Mar 25;7(1):13.
[PubMed: PM32209132](#)
20. Allison HA. Hemorrhage control: lessons learned from the battlefield use of hemostatic agents that can be applied in a hospital setting. *Crit Care Nurs Q*. 2019 Apr/Jun;42(2):165-172.
[PubMed: PM30807340](#)
21. Zhang YJ, Gao B, Liu XW. Topical and effective hemostatic medicines in the battlefield. *Int J Clin Exp Med*. 2015 Jan 15;8(1):10-9.
[PubMed: PM25784969](#)