

Non-pharmacological prevention of surgical wound infections in patients undergoing emergency surgery: a scoping review

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Introduction

Health care-associated infections are acquired by patients when receiving care and are the most frequent adverse event affecting patient safety. One of the most prevalent is the surgical site infection, with higher number after emergency surgery. Surgical site infection (SSI) is an infection that occurs after surgery in the part of the body where the surgery took place and not present before operation. There are international and national guidelines and recommendations to improve the surgical patient's safety. Despite the protocols and procedures, SSI remains a substantial cause of morbidity and mortality among hospitalized patients. The SSI are more prevalent in emergency surgery, some studies identified incidence of wound infection in emergency cases almost 11 times the incidence in elective cases. This review aimed to map alternative non-pharmacological interventions, interventions without pharmacological drugs, to prevent surgical site infections when the patient needs emergency surgery and is not possible to do the preoperative and intraoperative standard protocol.

Objective

The objective of this review is to identify and map the evidence in non-pharmacological prevention of surgical wound infections in patients undergoing emergency surgery.

Material and Methods

Studies published in English, Portuguese and Spanish from the last 5 years were included. The time limitation was defined based in the rapid evolution of the evidence in this field. The databases searched included: PubMed, CINAHL Complete,

Nursing & Allied Health Collection, Cochrane Plus Collection, MedicLatina and SciELO. The search for unpublished evidence and grey literature included: RCAAAP (Repositório Científico de Acesso Aberto de Portugal), OpenGrey and Official Health Care Organizations websites.

For inclusion criteria this scoping review considers any research article or policy document, including unpublished reports, that provides information related to prevention of surgical wound infections in patients undergoing emergency surgery, excluding pharmacological interventions, and alternative effective measures to preoperative e intraoperative standard protocol and guidelines interventions to prevention of surgical site infection. This review contemplates studies that included patients of all ages undergoing all kinds of emergency surgery in the context of all kinds of preoperative and intraoperative intervention provided in emergency surgery, in all types of health care units. The main search words were: patients; prevention and control; risk management; patient safety; surgical site infection; surgical wound infection; postoperative wound infection; emergency; urgent; surgery and operative procedure.

Data were extracted from papers and included in the scoping review by two independent reviewers using a data extraction tool developed by JBI. The data extracted includes specific details about the population, concept, context and key findings relevant to the review question. Any disagreements between the reviewers were resolved through discussion or with two independent reviewers.

This review identified 474 studies of which 10 were screened at full-text stage, and six sources were eligible to be included in the final scoping review.

Results

Lack of studies in this field may be correlated to the specificity of the context of the review. The intervention to prevention of the surgical site infection in patient undergoing emergency surgery find was:

- use of supplemental perioperative oxygen, patient with good oxygenation have less infection;
- the quality of irrigation and antiseptic on traumatic wounds before surgical procedure have a correlation with the surgical site infection;
- active warming to maintain normothermia reduce surgical site infection;
- higher blood transfusion dose in the bleeding trauma patient, the highest risk of infections complications;
- primary closure with negative-pressure wound therapy in high risk abdominal surgical wound are associated with best performance in preventing surgical site infection.

Conclusion

Although our interest was to find non-pharmacological alternative measures to prevention of surgical wound infections in patients undergoing emergency, we find that restore the homeostasis of the patient undergoing emergency surgery is the gold intervention to prevent surgical wound infection. Further research is needed to find alternative interventions.