

A survey of practice and opinions on the use of topical antibiotics to prevent surgical site infection; more confusion than consensus.

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Introduction

Reducing the incidence of surgical site infection (SSI), which cause ~25% healthcare-associated infections, is important in terms of patient care and optimizing healthcare resources¹.

Topical antibiotics are those administered directly to a surgical wound intraoperatively or immediately post-operatively in forms such as powders, sponges and irrigation solutions².

Current healthcare guidelines from the NICE³, CDC⁴ and WHO⁵ do not recommend the use of topical antibiotics in surgery to prevent SSI.

Objectives

1. To review the literature to inform a survey of healthcare professionals.
2. To determine the extent of the use of topical antibiotics to prevent SSI in practice and the opinions of healthcare professionals most likely to be involved in the prescription of topical antibiotics to prevent SSI, and reasoning behind these opinions.

Methods

Peer-reviewed literature (2010-2017) was searched in PubMed for human studies on orthopedic, cardiac and abdominal SSI.

Local or topical antibiotics did not include antibiotic-impregnated sutures, devices or cements.

A survey was designed and distributed to the BSAC and EWMA memberships (June 2017).

Results

Participant demographics

The questionnaire received 160 completed responses:

- 33 surgical participants who directly used topical antibiotic in practice
- 75 advice-giving participants who provided advice on (64%) or formulate guidelines for (85%) the use of topical antibiotics in practice
- 52 opinion-giving participants who were not directly involved in their use

Practical use of topical antibiotics to prevent SSI

- 45% of surgical respondents use topical antibiotics, with 47% of those using them in over 50% of cases.
- Of the surgical and advice-giving participants the most commonly used or recommended topical antibiotic was gentamicin collagen sponges (29%) followed by gentamicin and vancomycin powders/pastes (15%) (Fig. 1).

Opinions on the use of topical antibiotics to prevent SSI

- The majority of respondents (56%) did not believe there is a significant body of evidence for the use of topical antibiotics (Fig. 2).
- 46% did not believe they are cost effective, 81% believe they contribute to the development of antibiotic resistance and there is no clear opinion within the respondent cohort as to if they cause detrimental side effects for the patient

Influences for the use of topical antibiotics to prevent SSI

- Evidence from published studies was frequently stated as an influencer by all groups (Fig.3).
- The surgical group stated different influence compared with the advice giving group (Fig. 3).

Conclusions

- There are a range of opinions, influences and practices among healthcare professionals about the use of topical antibiotics to prevent SSI.
- Variation in clinical practice must be addressed as part of antibiotic stewardship.
- Results from the literature review suggest a lack of high quality, comprehensive and well controlled trials that are essential to informing decisions.

Acknowledgements

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Results

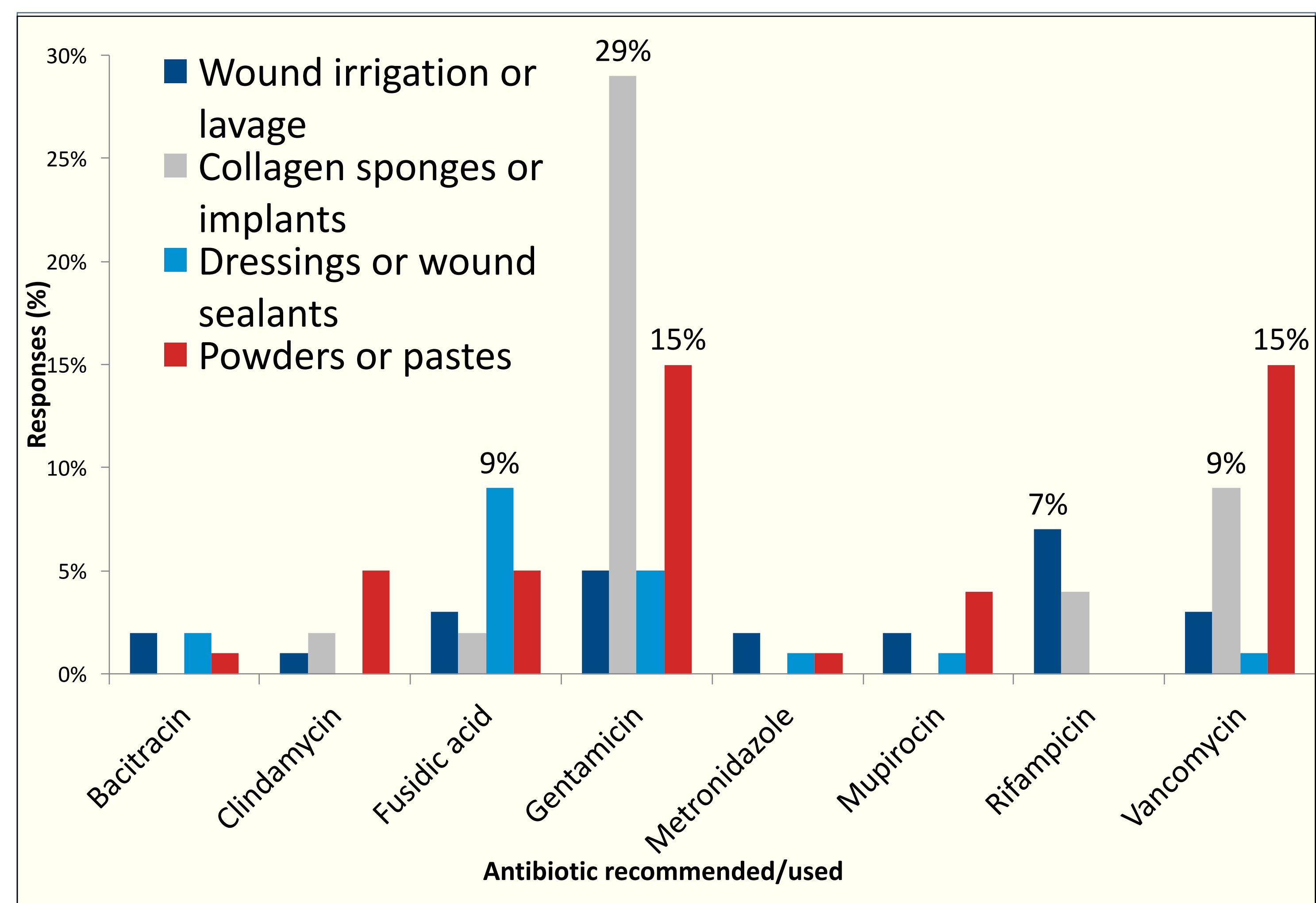


Figure 1. Administration methods and corresponding antibiotics used to prevent surgical site infections, as indicated by surgical and advice-giving participants (n=108 responses).

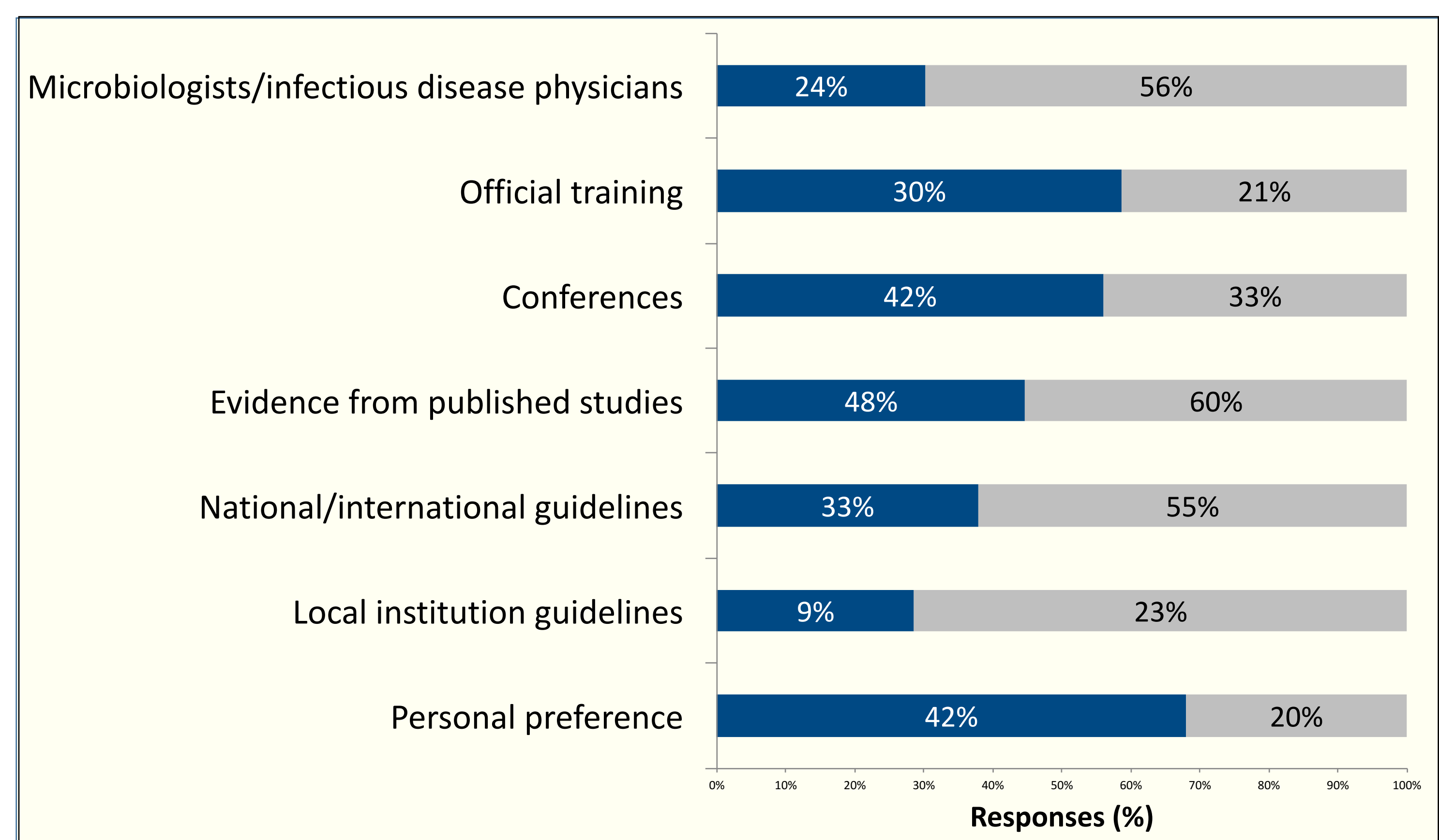


Figure 2. Influences on the use of topical antibiotics to prevent surgical site infections, as indicated by participant category (blue bars, surgical category; grey bars, advice-giving category) (n=108 responses).

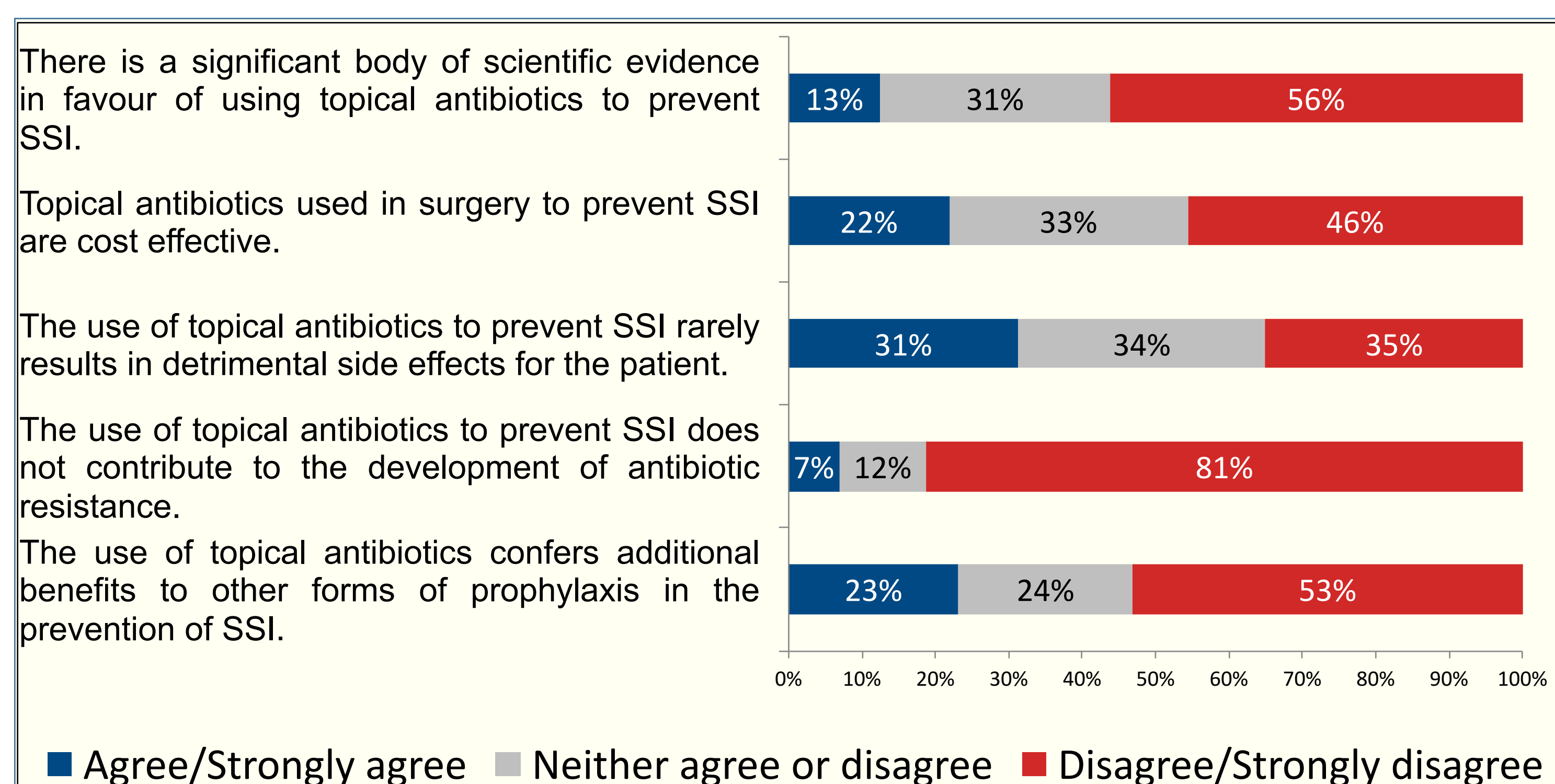


Figure 3. The extent to which participants agree or disagree with selected statements about the use of topical antibiotics to prevent surgical site infections (n=160 responses).

References

- 1) Hatch, M.D. *et al.* 2017. J Shoulder Elbow Surg 26: 472-7; 2) O'Neal, P.B. *et al.*, 2016 Surg Infect 17: 275-85; 3) NICE, 2017 CG74 <https://www.nice.org.uk/guidance/cg74>; 4) Berrios-Torres *et al.*, 2017 JAMA surgery 30329; 5) WHO 2016 <http://www.who.int/gpsc/ssi-prevention-guidelines/en/>