

The use of perioperative prophylactic antibiotics following excision of ulcerated skin lesions in the UK – A national, multi-speciality survey of clinicians

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31 ABSTRACT

32 Skin cancer is the most common malignancy in the UK, and up to a third of lesions are
33 ulcerated at the time of excision. Ulceration has been shown to increase the risk of
34 developing surgical site infection post-excision, with some studies finding infection rates of
35 33%. However, no specific guidelines for the use of antibiotic prophylaxis in such cases exist.
36 We surveyed 129 clinicians from dermatology, plastic surgery, ear, nose and throat surgery
37 and oral and maxillofacial surgery, who all excise skin lesions on a regular basis. There was
38 significant variability in their practice with regards to antibiotic prophylaxis, with 9% always
39 prescribing them and 19% never prescribing them. Variation exists both inter- and intra-
40 speciality. This variation increases the risk of antimicrobial resistance and shows a paucity of
41 good clinical evidence, which mandates a well-designed clinical trial to guide future practice.

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43 LEARNING POINTS

- 44 • There is significant variability in prescribing of prophylactic antibiotics between
45 practitioners who excise ulcerated skin lesions
- 46 • This variation exists both within specialities and between different specialities
- 47 • There is a lack of evidence for the efficacy of prophylactic antibiotics, but up to a
48 third of patients develop infection after ulcerated lesions are excised

INTRODUCTION

Skin cancer is the commonest cancer in the UK, with a lifetime incidence of 1 in 4 for males and 1 in 5 for females.¹ The mainstay of treatment is surgical excision with curative intent. Though this minor surgical procedure is often without complication, a proportion of patients will develop a surgical site infection (SSI) post-operatively. The risk of SSI following minor skin surgery reported in the literature shows wide variance, from <1% through to 8%, and as high as 30% following the excision of ulcerated skin lesions.^{2,3} Risk factors for SSI, outwith lesion ulceration, include patient related factors such as diabetes, cigarette smoking and immunosuppression, and procedure related factors, such as the anatomical location of the lesion and the reconstruction employed (such as skin grafts and local skin flaps).^{2,4} SSI may have wide-ranging consequences, including prolonged and repeated treatment with antibiotics, repeated visits to healthcare providers, prolonged healing and poor cosmesis. SSI also incurs a significant cost burden to the health service.⁵ Though guidelines for the use of antibiotic prophylaxis in all surgeries exist,⁶ there is little evidence or direct guidance for use following excisional skin surgery. Moreover, the continued and widespread inappropriate use of antibiotics is a significant contributor to antimicrobial resistance (AMR),⁷ which the World Health Organisation has declared as one of the biggest threats to global health today.

A previous UK survey of dermatologists examined attitudes towards the use of prophylactic antibiotics following excision of ulcerated lesions.⁸ However, there has been no consensus sought from clinicians in other specialties involved in the management of skin cancers, such as plastic surgeons, oral and maxillofacial surgeons (OMFS) and ear, nose and throat (ENT) surgeons. The aim of this survey, therefore, was to identify the current practices regarding antibiotic prophylaxis following minor skin surgery across multiple specialities involved in the treatment of skin cancer to inform design of a randomised controlled trial.

REPORT

A web-based questionnaire was designed and disseminated via the mailing lists of the British Association of Dermatologists (BAD), the British Association of Plastic, Reconstructive and Aesthetic Surgeons (BAPRAS), ENT UK, British Society for Dermatological Surgery (BSDS), UK Dermatology Clinical Trials Network (UK DCTN) and social media. The survey was

open between November and December 2021. It contained five questions relating to current practice, and one question relating to participation in a future trial.

We received 129 responses from clinicians representing dermatology (63%), OMFS (17%), Plastic surgery (15%) and ENT (5%). The majority of respondents were either consultant or associate specialist grade (78%), with most remaining respondents being speciality registrar (higher trainees) or equivalent.

Respondents were either unsure about (23%), or did not have (67%) specific local guidance for the use of antibiotic prophylaxis in minor skin surgery. Despite this, prophylactic antibiotics were *always* used following excision of ulcerated lesions by 9% of respondents, *often* by 19%, *sometimes* by 21%, *rarely* by 33% and *never* used by 19%. All respondents identified penicillin-based antibiotics as their agents of choice, with flucloxacillin being the most commonly used.

There was wide variability between specialties in antibiotic prescribing. ENT surgeons were the least likely to prescribe antibiotics, with respondents either *rarely* (33%) or *never* (66%) prescribing them, followed by OMFS surgeons, with 50% of respondents *rarely* prescribing them and 23% *never* prescribing them. 21% of Plastic surgeons stated that they *always* prescribed antibiotic prophylaxis for ulcerated lesions, though 26% *never* prescribed them and 26% *rarely* prescribed them. Dermatologists showed the most even distribution of responses, with 8% *always* using prophylactic antibiotics, 24% using them *often*, 27% *sometimes*, 29% *rarely* and 13% *never* using them.

Typical treatment course varied amongst respondents. The commonest course amongst all specialties was 3-5 days, with 50% respondents prescribing this. A single perioperative dose was used by 12% of Dermatologists, 29% of Plastic surgeons, and 18% of OMFS surgeons, and conversely a course longer than 5 days was used by 40% of Dermatologists, 14% of Plastic surgeons and 12% of OMFS surgeons.

DISCUSSION

Our survey has demonstrated significant inter- and intra-speciality variability in the use of prophylactic antibiotics following excision of ulcerated skin lesions. This is in keeping with previous studies,⁸ but is the first study to show variability cross-speciality. This inconsistency reflects a paucity of high-quality evidence in the form of randomised controlled trials, and

such a trial would help in standardisation of practice between specialities. Identifying the optimal prophylaxis for reducing SSI will certainly benefit patients, and will potentially reduce the number of inappropriate, prolonged antibiotic prescriptions, a significant contributor to AMR.

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