

Guidelines on Antibiotic Prophylaxis in Breast Surgery

Introduction

In the UK, there is no consensus on antibiotic prophylaxis in breast surgery. There is variability amongst breast units in the use of, choice and duration of prophylaxis for breast surgery procedures.

Trust level guidelines for antibiotic prophylaxis are often derived from general surgery operations. Often no specific consideration is given to breast surgery procedures, which are thought of as "clean surgery". However the implications of surgical site infections (SSI) in this cohort including delay to the commencement of adjuvant treatments and loss of implants are potentially serious. The incidence of SSIs for breast cancer procedures ranges between 3-15%ⁱⁱⁱ with women having immediate breast reconstruction at even higher risk of SSIⁱⁱⁱ exceeding 20%^{iv}.

This document attempts to balance the trade off between the increased risk of antibiotic resistance for the general population and the increased risks of Clostridium Difficile infection for the individual patient with the adverse implications of SSI for the breast surgery patient. The best available evidence and consensus of experienced clinicians is used to construct this guideline. It will not encompass adjuncts such as drains or the treatment of a suspected or proven SSI.

The need for antibiotic prophylaxis

There is a paucity of factual data in the literature to inform an evidence based recommendation on antibiotic prophylaxis. The best available evidence is drawn from a Cochrane review (2012) of 9 studies^v and a systematic review (2013) of 81 studies^{iv}. The Cochrane review concluded that antibiotic prophylaxis reduced SSIs for patients undergoing breast cancer surgery. Patients who undergo breast reconstruction are identified as a higher risk group for SSI. The review could not conclude on preferred antibiotics or optimum duration. The systematic review could also not find a consensus on the necessary duration of antibiotic prophylaxis following breast reconstruction, but did not find any benefit for patients who received them for longer than 24 hours.

The ABS and BAPRAS *Oncoplastic Breast Reconstruction: Guidelines for Best Practice* (2012) lists a selection of measures to reduce SSI. For example:

Laminar flow facilities should be used if available for implant based reconstruction. The numbers of closed suction drains used should be limited and they should be removed as soon as practicable. Drains used for extended durations should be tunneled through the skin. Disposable drapes should be used and alcohol chlorhexidene preferentially used for skin preparations.

Recommendation	Procedures
No prophylaxis	Stand alone sentinel node biopsy Excision of benign lump
Consider Single shot prophylaxis	Simple mastectomy Wide local excision Axillary node clearance Therapeutic mammoplasty Breast reduction/mastopexy Nipple surgery All repeat/revision surgery
Single dose at induction, 2 nd intraoperative dose if >4hrs operating time, maximum 3 doses.	All implant based surgery. All autologous breast reconstruction procedures.

**Michael Douek, Senthurun Mylvaganam, Jane Ooi, Jennifer Rusby, Elizabeth Shah, Philip Turton, Rhodri Williams, Kieran Horgan
On Behalf of the ABS Council**

And with thanks to Lucy Davies for assistance in their production

References:

ⁱ Lefebvre D, Penel N, Deberies M, et al. Occurrence and risk factors for wound infection in breast cancer surgery. *La Presse Medicale* 2000; 29: 1927-32

ⁱⁱ Witt A, Yavuz D, Walchetseder C, et al. Preoperative core needle biopsy as an independent risk factor for wound infection after breast surgery. *Obstetrics and Gynaecology* 2003; 101: 745-750

ⁱⁱⁱ Spauwen P, Wobbes T, van der Sluis F. Immediate breast reconstruction: results and satisfaction. *European Journal of Plastic Surgery* 2000; 23: 211-3

^{iv} Phillips B, Bishawi M, Dagum A, et al. A Systematic review of antibiotic use and infection in breast reconstruction: what is the evidence? *Plast Reconstr Surg* 2013; 131: 1-13

^v Bunn F, Jones D, Bell-Syer S. Antibiotics to prevent surgical site infection after breast cancer surgery. *Cochrane Database of Systematic Review* 2012, Issue 1

Note:

Members of ABS Council and Committees met and discussed a set of topics on which it was felt clinical guidance was sought by ABS members. This document represents the considered, agreed opinions of experienced breast surgeons. It is not meant to supplant authoritative guidelines. Discussion and correspondence would be gratefully received by the ABS to lucydavies@absghi.org.uk