Routine antibiotics don't improve outcomes of post-mastectomy breast reconstruction

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For breast cancer patients undergoing breast reconstruction after mastectomy, avoiding postoperative oral antibiotics does not reduce the risk of infections, reports a study in the May issue of *Plastic and Reconstructive Surgery*.

"Our experience suggests that discontinuing routine oral antibiotic treatment after implant-based breast reconstruction does not lead to an increase in surgical site infections, and will eliminate a small but significant risk of allergy and other antibiotic-related complications," comments ASPS Member Surgeon Mark Sisco, MD, of NorthShore University HealthSystem, Evanston, Ill.

No increase in infections after policy change on preventive antibiotics

A growing number of breast cancer patients are undergoing breast reconstruction after mastectomy, particularly immediate reconstruction using implants. Surgical site infections (SSIs) occur in 10% to 25% of patients undergoing this procedure, leading to increased rates of hospital readmission, repeat surgery, and reconstructive failure.

Historically, plastic surgeons have given extended antibiotic prophylaxis (EAP) to reduce the risk of SSI. The use of postoperative oral antibiotics has continued despite a lack of evidence for its effectiveness, and amid rising concerns about antibiotic resistance. In 2016, the authors' health system joined the growing trend toward ending routine EAP for post-mastectomy breast reconstruction.

To evaluate the impact of this practice change, Dr. Sisco and colleagues compared outcomes in two groups of patients: 654 women (1,004 breasts) receiving EAP and 423 women (683 breasts) not receiving postoperative oral antibiotics. Both groups received a single dose of intravenous antibiotic before surgery.

After surgery, the overall infection rate was similar between groups: 7.9% with EAP and 9.1% without EAP. After adjustment for differences in patient characteristics, the risk of SSIs was not

significantly different between groups. This was even though patients in the non-EAP were more likely to receive some newer techniques—including nipple-sparing mastectomy and pre-pectoral ("above the muscle") implant placement—thought to carry an increased risk of complications.

'Thousands of women nationwide' may have adverse reactions to EAP

Meanwhile, patients receiving EAP had some "infrequent but not insignificant" adverse events, including a two percent rate of moderate to severe allergic reactions. At least four women in the EAP group developed infection with antibiotic-resistant Clostridium difficile ("C-diff") bacteria. Neither of these complications occurred in patients who did not receive extended antibiotics.

There was also evidence that EAP affected the types of bacteria isolated from patients who developed infections, including a higher rate of gram-negative bacteria. Extended antibiotic use was associated with a "broader range of pathogens" and more frequent need for second-line intravenous antibiotics.

"Although the use of EAP does not appear to worsen clinical outcomes, marked differences in the microbiology of associated infections may make them more difficult to treat," Dr. Sisco and co-authors write. Especially at a time when breast reconstruction rates are rapidly increasing, "Our findings suggest that thousands of women are having adverse reactions to EAP nationwide, and some of these are likely to be serious," the researchers add.

While acknowledging some important limitations of their study, the authors note that a definitive randomized trial of ending routine EAP is

unlikely to be performed. Dr. Sisco and colleagues conclude, "We hope that our experience will give surgeons additional evidence and courage to change their practice."

More information: Mark Sisco et al, Oral Antibiotics Do Not Prevent Infection or Implant Loss after Immediate Prosthetic Breast Reconstruction, *Plastic & Reconstructive Surgery* (2023). DOI: 10.1097/PRS.0000000000010073

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