MRSA screening for surgical site infection prevention prior to hysterectomy at a cancer center

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OBJECTIVES

Screening and decolonization for methicillin resistant staphylococcus aureus (MRSA) is routinely performed prior to surgery in many centers, however limited data describe the contribution of MRSA to surgical site infections (SSIs) in gynecologic oncology patients. We present the outcome of a MRSA screening and decolonization program implemented as part of a bundled intervention to prevent SSIs after hysterectomy at a cancer center.

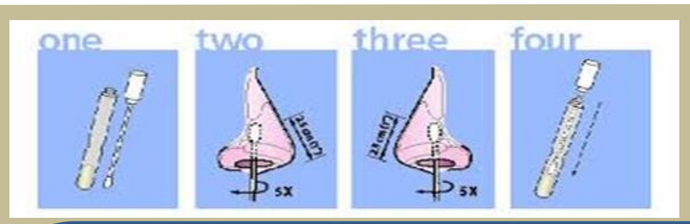
PRE-BUNDLE: hysterectomies 1/2017- 7/2016

SSI Prevention Bundle 7/2016

POST-BUNDLE: hysterectomies 7/2016 – 1/2017

METHODS

Patients were screened for MRSA colonization by polymerase chain reaction nasal swab during their preoperative surgical consultation. Decolonization of MRSA carriers included oral doxycycline 100 mg twice daily for 7 days pre op and 5 days post op, and mupirocin 2% ointment to both nares for 5 days. For all MRSA carriers, vancomycin was added to routine preoperative antibiotics. We implemented a perioperative SSI prevention bundle on July 19, 2016 which included a renewed in-service teaching for clinic staff to increase performance of MRSA screening. Additional interventions included preoperative 4% chlorhexidine gluconate (CHG) showers for 5 days prior to surgery, the use of 4% CHG topical wipes on day of surgery, revised and standardized preoperative antibiotics, a 4% CHG soap vaginal prep, and post-op 4% CHG showers. Consecutive patients undergoing hysterectomy by the gynecologic oncology division 6 months PRE and POST implementation of the bundled intervention were retrospectively reviewed. Statistical analysis included Fishers exact test and the Kruskal-Wallis test.



Positive MRSA Screen

MRSA Decolonization Protocol

[ ] Instruct the patient to follow *MRSA Pre-operative decolonization Protocol-Patient instructions Form*

[ ] <u>CHG 4% topical liquid</u> : " Shower with CHG from neck down once daily for 5 days prior t surgery."

[ ] <u>Mupurocin 2% ointment</u> : " Apply pea sized amount of ointment into each nostril twice daily for 5 days prior to surgery."

[ ] <u>Doxycycline 100mg</u> *(or)* <u>Bactrim DS:</u> " Take 1 tablet BID for 5 days prior to surgery, continue for 7 days after surgery."

RESULTS

From 1/18/2016 to 1/18/2017 we identified 358 women undergoing hysterectomy (178 PRE-intervention and 180 POST-intervention). MRSA screening was completed in 129/178 (72.5%) PRE, and 159/180(88.3%) POST ($p<0.001$). MRSA colonization was detected in 10/298 (3.4%), with 4/129 (3.1%) PRE and 6/159 (3.8%) POST intervention ($p=1.0$). Decolonization was completed in 2/4 PRE and 5/6 POST patients. The SSI rate was 14/178 (7.9%) PRE and 6/180 (3.3%) POST. Cultures were collected for 13/14 PRE and 6/6 POST SSIs. At least one organism was identified in 5/6 PRE and 10/13 POST. <u>No SSIs involved MRSA</u>.

Covariate	Pre N=178 (%)	Post N=180 (%)	P Value
MRSA screen completed	129/178 (72.5)	159/180 (88.3)	<0.001%*
MRSA detected	4/129 (3.1)	6/159(3.8)	1
MRSA decolonization completed	2/4 (50)	5/6 (83)	

CONCLUSIONS

Preoperative MRSA screening is feasible for the gynecologic oncology population. Screening rates can be improved with in-service teaching. MRSA is an uncommon cause of SSI after hysterectomy. Cost effectiveness of MRSA screening prior to hysterectomy should be evaluated.