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INTRODUCTION

- PJI: 1st reason for revision surgery following total knee/hip arthroplasty (TJA)
- Two stage revision: gold standard treatment
- Antibiotic-loaded spacers: Systemic toxicity, Elevated systemic antibiotic concentrations
- Not only does PJI in patients with comorbidities cause systemic inflammation that may lead to organ failure, but also the absorption of antibiotics itself may cause nephrotoxicity and renal failure

AIM

To evaluate risk factors that predict readmissions and postoperative complications in patients undergoing hip and knee revision arthroplasties with insertion of antibiotic-loaded spacer

METHODS AND MATERIALS

- ❖ The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) registries between 2006 and 2019 were queried to identify all revision TJAs with insertion of spacer
- ❖ **Excluded:** preoperative renal failure, dialysis, and serum creatinine >1.5
- ❖ Multivariate logistic regression analysis adjusted for covariates to assess risk factors

RESULTS

➤ **4,842 patients**
2,466 male - 2,376 female

Patients undergoing revision TJA with Spacer insertion (n=4,842) (n, %)	Outcome	(n, %)
hyponatremic	Total operation time in minutes (mean, sd)	134 (69)
dehydrated with a BUN/Cr >20	Length of hospital stay in days (mean, sd)	6.1 (6.6)
hypoalbuminemic with albumin <3.5	Mortality	41 (0.8)
anemic (HCT <36%)	SSI	457 (9.4)
supratherapeutic INR of >1.5	Superficial SSI	41 (0.8)
BMI (mean, sd)	Deep incisional SSI	94 (1.9)
Diabetes	Organ space SSI	325 (6.7)
Smoking	Pneumonia	35 (0.7)
COPD	Progressive renal insufficiency/Renal failure	43 (0.9)
HTN	UTI	50 (1)
Bleeding disorders	Stroke/CVA	4 (0.08)
Sepsis within 48 hours prior to surgery	Bleeding transfusions	993 (20.5)
	DVT/PE	59 (1.2)
	Sepsis	259 (5.3)
	Reoperation	260 (5.3)
	Clostridium difficile (C.diff) colitis	23 (0.6)
	Periprosthetic fracture	23 (0.6)

Variable	Adjusted OR	95% CI	P value
Transfusion			
Anemia	4.05	3.13-5.24	<0.001
Renal Failure			
INR>1.5	7.07	1.07-46.58	0.042
Post surgical sepsis			
Hypoalbuminemia	2.1	1.34-3.27	0.001
Anemia	2.01	1.25-3.22	0.004
BMI	1.02	1.001-1.04	0.039
Venous Thromboembolism			
BMI	1.05	1.005-1.09	0.02

CONCLUSIONS

- Systemic absorption of antibiotics must be considered in patients with preoperative characteristics that increase the risk for medical complications
- It is important to identify malnutrition, dehydration, supratherapeutic INR, and anemia as modifiable variables before surgery
- Early involvement of an interdisciplinary medical management team is crucial in patients with multiple comorbidities