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Author: Stephen Kates

### QUESTION 3: Do preoperative pneumonia/urinary tract infections (UTIs)/trophic ulcers increase periprosthetic joint infection/surgical site infection (PJI/SSI) risk in femoral neck fracture patients treated by partial/total hip arthroplasty (THA)?

**RECOMMENDATION:** There is a paucity of literature examining whether pneumonia/UTI/trophic ulcers increase SSI/PJI risk for patients with femoral neck fractured treated by hemi- or THA.

**LEVEL OF EVIDENCE:** Limited

**DELEGATE VOTE:** Agree: 91%, Disagree: 0%, Abstain: 9% (Super Majority, Strong Consensus)

#### RATIONALE

Infection after femoral neck fracture treated with hemiarthroplasty/THA is an uncommon but devastating problem. The current literature cites a 1.7 to 7.3% risk of SSI after hemiarthroplasty for femoral neck fracture [1]. Commonly-cited risk factors for PJI/SSI after hemiarthroplasty for femoral neck fracture include higher Body Mass Index (BMI), prolonged surgery time, preoperative elevation in C-reactive protein (CRP) levels, surgeon experience level, reoperation and hematoma formation [2,3].

For patients undergoing primary total joint arthroplasty, pneumonia, UTIs and skin ulceration were shown to be predisposing factors for developing PJI [4-8]. However, there remains a lack of publications that specifically examine the risk of PJI/SSI related to the preoperative presence of pneumonia, UTI or skin ulceration in patients with femoral neck fracture treated with hemiarthroplasty or THA. One small prospective study demonstrated that UTI preoperatively was a significant risk factor for infection (odds ratio = 10;  $p = 0.04$ ) [9]. A systematic review of the literature indicated that two or more urinary tract catheterizations during hospitalization was identified as a risk factor for SSI [1]. After a thorough investigation, we could not find any existing evidence of an association between preoperative pneumonia or trophic ulcers with the development of PJI/SSI after hemiarthroplasty or total hip replacement for femoral neck fractures.

In summary, there is scant or no evidence to suggest that preoperative pneumonia/UTI/trophic ulcers result in an increase in PJI/SSI risk in femoral neck fracture patients treated by partial/THA. The little evidence that is available is low quality and suggests that preoperative urinary tract infection increases the odds of PJI after hemiarthroplasty. Higher quality and larger scale studies are necessary in

this subset population to make valid conclusions on this possible relationship.

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