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[O19] RISK FACTORS FOR THE DEVELOPMENT OF DEEP INFECTION FOLLOWING HIP FRACTURE SURGERY: ANALYSIS OF 2,822 CONSECUTIVE PATIENTS

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Aim: This study aimed to identify risk factors for development of deep periprosthetic joint infection (PJI) in patients following surgical treatment of neck of femur fracture.

Method: This study identified a consecutive series of 2,822 (2,052 female, 73%) patients who underwent either hemiarthroplasty (n=1,825, 65%) or fixation (DHS) (n=997, 35%) for fractured neck of femur performed between January 2009 and June 2015 at our institution. Full patient demographics, co-morbidity and peri-operative complication data were determined. The majority of patients were either ASA 2 (n=663, 23%) or ASA 3 (n=1,521, 54%), mean age = 81.3 years (SD 10.3). All patients were followed up post-operatively by a dedicated surgical site infection (SSI) monitoring team in order to identify patients who developed a PJI within 1 year. A stepwise multivariable logistic regression model was used to identify patient and surgical factors associated with increased risk of infection. Predictors with a p-value of <0.20 in the univariate analysis were included in the multivariate analysis.

Results: Thirty-nine (39) cases of deep periprosthetic infection were identified (hemiarthroplasty n=35, DHS n=4) representing an overall deep infection rate of 1.4% (hemiarthroplasty 1.9%, DHS 0.4%). The most common infecting pathogen was a pure growth of coagulase negative Staphylococcus (n=9, 23%) followed by a pure growth of Staphylococcus aureus (n=7, 18%). An increased risk of PJI was observed in patients who underwent hemiarthroplasty compared to those treated by fixation (odds ratio (OR) 6.50, 95%CI 2.26 - 18.7, p=0.001). Of patient factors, only blood transfusion within 30 days (OR 3.51, 95%CI 1.72 - 7.13, p=0.001) and the presence or development of pressure sores on or during admission (OR 2.99, 95%CI 1.24 - 7.19, p=0.015) were significantly associated with an increased risk of development of PJI. Use of high-dose dual antibiotic cement (gentamicin and clindamycin) was associated with a two-fold reduction in the risk of PJI (OR 0.39, 95%CI 0.20 - 0.76, p=0.005) vs standard dose gentamicin antibiotic cement.

Conclusions: This study found: 1) a deep infection rate similar to that reported earlier from large number studies from the UK, 2) a six-fold higher deep infection rate in hemiarthroplasties, compared to internal fixations, and 3) a three-fold higher infection rate in patients who suffer concomitant pressure sores or receive a blood transfusion up to 30 days post-operatively.