Open peripheral arterial bypass remains an important component of vascular surgery, and the primary outcome of concern is poor wound healing, which may lead to infection. Limiting postoperative infection is vital to prevent graft loss, limb loss, prolonged hospital stay, and increased cost.

Aims: To describe our surgical outlines for open bypass surgery and identify potential risk factors that predispose to SSIs after open peripheral arterial bypass operations.

Methods: Between 10/2008 and 12/2012, the hospital’s infection prevention and control department performed surveillance for SSIs after open bypass operations on the peripheral arteries (ICD-9 code 39.29). All SSIs were matched to 3 randomly chosen controls, or non-infected patients. National Healthcare Safety Network (NHSN) surveillance was performed on all infections. Co-morbidities included diabetes mellitus, chronic obstructive pulmonary disease (COPD), and stage III or IV chronic kidney disease (CKD), and obesity classes were used to classify patient’s BMI. Screening for nasal colonization with methicillin-resistant Staphylococcus aureus (MRSA) was performed with logit regression to identify factors predictive of SSIs.

Results: Over 2,500 procedures were performed during the surveillance period. Twenty-eight infected cases and 84 controls were reviewed. 47% of the patients had a relevant co-morbidity, including 35 (31%) with diabetes mellitus, 16 (14%) with end-stage renal disease (ESRD), 13 (11%) with cirrhosis, and 4 (3%) with human immunodeficiency virus. Multivariable analysis was performed with logistic regression to identify factors predictive of SSIs.

At least one medical comorbidity was predictive of SSI, OR, 95% CI: 1.39 (1.05-1.86) and 3.39 (1.33-8.67), respectively.

• For patients with risk index=1, 5/58 (8.67) developed infections. For risk index=2, 12/207 (5.79) developed infections, and for risk index=3, 1/10 (100%) developed infection.

• Older patients had an increased risk of infection, OR, 95% CI: 1.21 (1.05-1.40) and 2.30 (0.92-5.80), respectively.

• Patients with open operations, and a prosthetic graft was used in the aorto-bifemoral procedures.

Conclusion: Infections met the following classifications: 5 organ-space infections, 6 deep-incisional infections, and 1 superficial-infection infection. Compared to non-infected controls, cases had a higher prevalence of medical comorbidities (46%, 40%, 33%) and higher body mass index (30.4, 28.9, 28.2). Infection occurred more frequently with closed-suction drains (21% vs. 7%, p=0.07) and longer operative times (5 hr 19 min vs. 4 hr 34 min, p=0.05) in infected patients. On the initial surgery for a repeat procedure through the same surgical incision, 23 (82%) were matched to 3 randomly chosen controls, or non-infected patients. National Healthcare Safety Network (NHSN) surveillance was performed on all infections. Co-morbidities included diabetes mellitus, chronic obstructive pulmonary disease (COPD), and stage III or IV chronic kidney disease (CKD), and obesity classes were used to classify patient’s BMI. Screening for nasal colonization with methicillin-resistant Staphylococcus aureus (MRSA) was performed with logit regression to identify factors predictive of SSIs.

At least one medical comorbidity was predictive of SSI, OR, 95% CI: 1.39 (1.05-1.86) and 3.39 (1.33-8.67), respectively.

• For patients with risk index=1, 5/58 (8.67) developed infections. For risk index=2, 12/207 (5.79) developed infections, and for risk index=3, 1/10 (100%) developed infection.

• Older patients had an increased risk of infection, OR, 95% CI: 1.21 (1.05-1.40) and 2.30 (0.92-5.80), respectively.

• Patients with open operations, and a prosthetic graft was used in the aorto-bifemoral procedures.