

QUESTION 10: Is there a link between opioid consumption and an increased risk for surgical site infection/periprosthetic joint infection (SSI/PJI)?

RECOMMENDATION: Yes. The utilization of opioids prior to surgery has been associated with an increased risk of developing SSIs/PJIs.

LEVEL OF EVIDENCE: Limited

DELEGATE VOTE: Agree: 71%, Disagree: 17%, Abstain: 12% (Super Majority, Strong Consensus)

RATIONALE

In both in vitro studies and in animal models, opioids have been shown to have immunosuppressive effects, modulating both the adaptive and innate immune systems [1–6]. Opioids have been implicated in the development of various infections including human immunodeficiency virus (HIV), hepatitis C virus (HCV) and opportunistic bacterial infections [4,5,7,8].

Despite the increased interest in opioid research, few studies within the arthroplasty literature have examined the effect of preoperative opioid consumption and the subsequent development of infection. With respect to surgical site infections, Menendez et al. found that preoperative opioid utilization was associated with higher patient morbidity, including an increased risk of surgical site infections [9]. For PJI, Cancienne et al. found in a national database review that preoperative narcotic use was associated with a higher risk of PJI within one year [10]. Similarly, Bell et al. reported in a retrospective case-control study that preoperative opioid usage was independently associated with an increased risk of PJI within two years [11]. Furthermore, preoperative opioid usage has been implicated as a risk factor for early revision surgery [12–14]. Neither of the two database surveys in the literature, however, performed further sub-analyses on type of revision. Therefore, the relationship between preoperative opioids and septic revisions remains unknown.

In conclusion, limited evidence exists to support the role of opioids as a risk factor for development of SSI/PJI. Given the scope of the danger posed by these medications, there is a need for further studies to develop more concrete recommendations for potential risk factor modification.

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