

QUESTION 3: Does additional skin cleansing after placement of surgical drapes have a role in reducing the rate of surgical site infections/periprosthetic joint infections (SSIs/PJIs)?

RECOMMENDATION: Repeat skin cleansing following placement of surgical drapes may reduce bacterial colonization and the incidence of subsequent superficial SSIs.

LEVEL OF EVIDENCE: Limited

DELEGATE VOTE: Agree: 74%, Disagree: 15%, Abstain: 11% (Super Majority, Strong Consensus)

RATIONALE

The prevention of SSIs is a multifaceted effort. Among the many measures taken to reduce the incidences of SSIs, cleansing of the surgical site using a povidone-iodine or chlorhexidine solution prior to incision is considered a routine practice as this technique is thought to reduce the bacterial load at the surgical site [1–3]. Typically, the surgical site is draped after the cleansing solution has been applied. It has been hypothesized that bacteria may be reintroduced to the surgical site during this draping process [4]. There are a number of mechanisms through which this has been thought to occur, including lift-off of the draping, contamination of the surgical glove-tips, contact of the skin with non-sterile material and/or dropping of airborne particles from the room air onto the surgical site [5–7]. Thus, repeat skin cleansing following draping has been proposed as a way to prevent contamination of the surgical site before the procedure is initiated.

To our knowledge, there has been one prospective study assessing the efficacy of a second skin cleansing once surgical drapes have been applied. In a single-center randomized controlled trial, Morrison et al. compared two skin cleansing protocols in 600 patients undergoing total joint arthroplasty. The control arm consisted of a single cleansing, performed prior to the placement of surgical drapes, using a combination of 7.5% povidone iodine, 75% isopropyl alcohol and 10% iodine paint. The intervention arm consisted of a similar protocol, with a subsequent second skin cleansing with iodine and isopropyl alcohol, following the placement of surgical drapes. There were significantly lower rates of superficial SSIs in the intervention arm (6.5 vs. 1.8%). However, no significant differences were noted in the incidence of overall SSIs (both superficial and deep) between the two cohorts [8].

In conclusion, and based on a single prospective study, it appears that skin cleansing following the application of surgical drapes may reduce bioburden at the skin and result in lower rates of subsequent superficial SSIs. However, there is a need for additional evidence to determine if a second skin cleansing after draping truly leads to lower rates of SSIs/PJIs.

REFERENCES

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