

**Authors:** Plamen Kinov, Akos Zahar, Thorsten Gehrke, Markus Rossmann

## QUESTION 4: Does changing the drapes during debridement, antibiotics and implant retention (DAIR) affect the rate of success?

**RECOMMENDATION:** The impact and effectiveness of changing the drapes during DAIR has not been investigated and therefore it can be performed at the surgeon's discretion.

**LEVEL OF EVIDENCE:** Consensus

**DELEGATE VOTE:** Agree: 94%, Disagree: 5%, Abstain: 1% (Super Majority, Strong Consensus)

### RATIONALE

DAIR is a viable and effective option for the management of acute periprosthetic joint infections (PJIs) [1,2]. Published success rates for patients responding to DAIR treatment range from 14 to 100% [3,4]. However, as stated by Tsang et al., published rates improved after 2004 with a pooled mean proportion of success of about 72% [3]. The reason for improvement of success of DAIR is certainly multifactorial and includes a better understanding of the importance of performing a thorough debridement. Numerous factors that influence the outcome of DAIR have been identified including the timing of surgery, the number of procedures, the responsible micro-organism, the duration of antibiotic treatment, the exchange of removable components and other factors [3,5-9].

In a review article on DAIR treatment, the only statistically significant determinants of outcome were an early timing of debridement (with a median of < 7 days from the onset of symptoms of infection) and the exchange of removable components [3].

Even though some papers consider the question [10], there are no studies that assess the impact of changing the drapes during DAIR. After a systematic review of 51 papers, only one study was identified that mentioned the use of clean draping during the surgical procedure [11]. Other studies on one-stage exchange after PJI also mention redraping after implant removal and completion of debridement [12].

Changing the drapes during DAIR can be performed at the surgeon's discretion. Further studies are needed to investigate their role and effectiveness in the treatment of early PJI.

### REFERENCES

- [1] Zimmerli W, Trampuz A, Ochsner PE. Prosthetic-joint infections. *N Engl J Med*. 2004;351:1645-1654. doi:10.1056/NEJMra040181.
- [2] Parvizi J, Adeli B, Zmistowski B, Restrepo C, Greenwald AS. Management of periprosthetic joint infection: the current knowledge: AAOS exhibit selection. *J Bone Joint Surg Am*. 2012;94:e104. doi:10.2106/JBJS.K.01417.
- [3] Tsang STJ, Ting J, Simpson AHRW, Gaston P. Outcomes following debridement, antibiotics and implant retention in the management of periprosthetic infections of the hip: a review of cohort studies. *Bone Joint J*. 2017;99-B:1458-1466. doi:10.1302/0301-620X.99B11.BJJ-2017-0088.R1.
- [4] Sendi P, Lötscher PO, Kessler B, Graber P, Zimmerli W, Clauss M. Debridement and implant retention in the management of hip periprosthetic joint infection. *Bone Joint J*. 2017;99-B(3):330-336.
- [5] Brandt CM, Sistrunk WW, Duffy MC, Hanssen AD, Steckelberg JM, Ilstrup DM, et al. Staphylococcus aureus prosthetic joint infection treated with debridement and prosthesis retention. *Clin Infect Dis*. 1997;24:914-919.
- [6] Moojen DJF, Zwiwers JH, Scholtes VA, Verheyen CC, Poolman RW. Similar success rates for single and multiple debridement surgery for acute hip arthroplasty infection. *Acta Orthop*. 2014;85:383-388. doi:10.3109/17453674.2014.927729.
- [7] Zimmerli W, Ochsner PE. Management of infection associated with prosthetic joints. *Infection* 2003;31:99-108. doi:10.1007/s15010-002-3079-9.
- [8] Byren I, Bejon P, Atkins BL, Angus B, Masters S, McLardy-Smith P, et al. One hundred and twelve infected arthroplasties treated with "DAIR" (debridement, antibiotics and implant retention): antibiotic duration and outcome. *J Antimicrob Chemother*. 2009;63:1264-1271. doi:10.1093/jac/dkp107.
- [9] Cobo J, Miguel LGS, Euba G, Rodríguez D, García-Lechuz JM, Riera M, et al. Early prosthetic joint infection: outcomes with debridement and implant retention followed by antibiotic therapy. *Clin Microbiol Infect*. 2011;17:1632-1637. doi:10.1111/j.1469-0691.2010.03333.x.
- [10] Hansen E, Tetreault M, Zmistowski B, Della Valle CJ, Parvizi J, Haddad FS, et al. Outcome of one-stage cementless exchange for acute postoperative periprosthetic hip infection. *Clin Orthop Relat Res*. 2013;471:3214-3222. doi:10.1007/s11999-013-3079-3.
- [11] Sayeed Y, Quien M, Anoushiravani AA, Kim KY, Camus T, Schwarzkopf R, et al. Irrigation and debridement for periprosthetic hip infection: does timing play a role? *J Hip Surg*. 2017;01:74-79. doi:10.1055/s-0037-1603627.
- [12] Zahar A, Webb J, Gehrke T, Kendoff D. One-stage exchange for prosthetic joint infection of the hip, one-stage exchange for prosthetic joint infection of the hip. *HIP International*. 2015;25:301-307. doi:10.5301/hipint.5000264.



**Authors:** Jeffrey Granger, Gustavo A. Garcia, Michel Malo, Moneer M. Abouljoud

## QUESTION 5: Does the use of separate instruments for each side reduce the rate of subsequent surgical site infections/periprosthetic joint infections (SSIs/PJIs) in patients undergoing simultaneous bilateral total hip or knee arthroplasties (BTHA or BTKA)?

**RECOMMENDATION:** No. The use of separate instruments for each side does not appear to reduce the rate of subsequent SSIs/PJIs in patients undergoing simultaneous BTHA or BTKA.

**LEVEL OF EVIDENCE:** Limited

**DELEGATE VOTE:** Agree: 72%, Disagree: 19%, Abstain: 9% (Super Majority, Strong Consensus)