

PICO^o single-use Negative Pressure Wound Therapy (NPWT) helped to reduce length of stay (LOS) and surgical site complications (SSCs) compared with standard care

PICO reduced superficial SSCs, helping to significantly reduce extreme LOS, with significantly fewer dressing changes compared with standard care in patients undergoing primary hip and knee arthroplasties.



Study design

- An open-label, single-center, randomised (1:1), parallel-group, controlled study in patients undergoing routine elective primary total hip and knee arthroplasty at a single centre in the UK
- In total, 220 patients (mean age, 69 years) were recruited and randomised to either PICO single-use NPWT or standard care, with 6 weeks postoperative follow-up



Key results

- Wound complications
 - Compared with standard care, PICO single-use NPWT:
 - Benefited high-risk patients with an American Society of Anesthesiologists score ≥ 3 and a BMI $\geq 35\text{kg/m}^2$
 - Achieved up to nearly a 4-fold reduction (up to 76%) in superficial SSCs (2.0 vs 8.4%; odds ratio, 4.0; 95% confidence interval [CI], 0.95 to 30.0; $p=0.06$)
 - Redistributed grades of peak post-surgical wound exudate (Grade 4 exudate: 4 vs 16%; $p=0.007$)
 - Required fewer dressing changes (2.5 vs 4.2; $p=0.002$)
- Length of hospital stay
 - For patients treated with PICO, mean LOS was reduced by 0.9 days (95% CI, -0.2 to 2.5; Figure 1; $p=0.07$)
 - PICO helped to significantly reduce extreme LOS compared with standard care (Figure 2; $p=0.003$)

Figure 1. Mean length of stay (and range) with PICO single-use NPWT and standard care

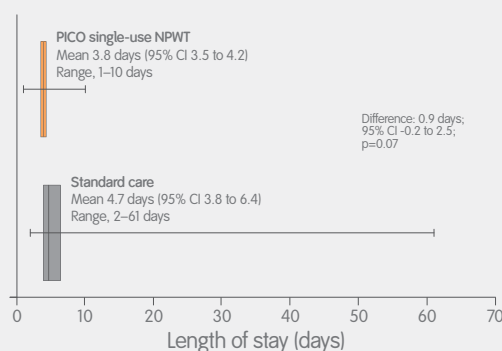
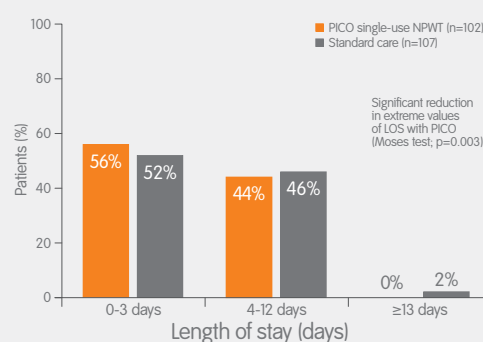


Figure 2. Length of stay with PICO single-use NPWT and standard care



Conclusions

PICO single-use NPWT helped to reduce wound complications by potentially reducing oedema and stabilising wound edges.

PICO single-use NPWT helped to reduce LOS in hip and knee arthroplasty and helped to reduce excessive LOS in high-risk patients.



Considerations

- Incidence of SSCs was reported by telephone 2 weeks after surgery; therefore, SSCs were not inspected directly
- Difference in LOS remained shorter with PICO after capping at 13 days to adjust for two patient outliers