

Mobilisation of an ERAS protocol following total knee replacement: improving patient length of stay and post-operative analgesia

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Background

Enhanced recovery after surgery (ERAS) programmes have been shown to reduce patient length of stay (LOS) following total knee replacement (TKR).¹

The Scottish Arthroplasty Project Report 2018 highlighted that NHS Grampian had performed poorly in average LOS outcomes (2018 average LOS 5 days).² An ERAS protocol was therefore implemented within NHS Grampian which specifically focused on early mobilisation of patients through effective post-operative analgesia.

Aims

- To evaluate patient LOS following TKR compared to previously reported figures following ERAS programme implementation.
- To compare LOS between spinal and general anaesthetic (GA).
- To evaluate use of post-operative analgesia.

Results

A total of 175 procedures were carried out over the time period: 27 (15.4%) GA, 146 (83.4%) spinal, 2 (1.2%) spinal and GA.

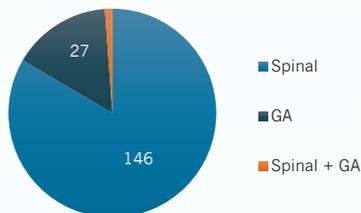


Figure 2. Type of anaesthesia administered (displayed as number of procedures).

Post-Operative Analgesia

- 81.7% (n=143) required ≤ 4 oral breakthrough doses
- 1.1% (n=2) required IV rescue
- 0.6% (n=1) required PCA

Conclusions

- Patient LOS following TKR has improved following implementation of an ERAS protocol within NHS Grampian compared to previous Scottish Arthroplasty Project Report figures. LOS outcomes are now favourably comparable to other health boards.
- Patient LOS is not affected by type of anaesthesia used.
- Post-operative background analgesia is effective, resulting in low requirements for breakthrough opiate analgesia, IV rescue or PCA.
- Ongoing data collection will help further refine ERAS pathway, streamlining our elective TKR service.

¹Zhu, S., Qian, W., Jiang, C., Ye, C. and Chen, X., 2017. Enhanced recovery after surgery for hip and knee arthroplasty: a systematic review and meta-analysis. *Postgraduate Medical Journal*, 93(1106), pp.736-742.

²The Scottish Arthroplasty Project Report 2018. <https://www.arthro.scot.nhs.uk/docs/2018/2018-08-14-SAP-Annual-Report.pdf?1>

³Wainwright TW, Gill M, McDonald DA, Middleton RG, Reed M, Sahota O, et al. Consensus statement for perioperative care in total hip replacement and total knee replacement surgery: Enhanced Recovery After Surgery (ERAS®) Society recommendations. *Acta Orthop*. 2020



Figure 1. Key components of ERAS Protocols according to the ERAS society.³

Methods

- All patients who underwent TKR over a 5-month period (Apr – Aug 2019) within NHS Grampian were identified.
- Data collected retrospectively from ERAS team proforma completed during admission, including: 1) LOS 2) type of anaesthesia 3) breakthrough, IV rescue and PCA post-operative analgesia requirements.

Length of Stay:

- Mean LOS = 3.34 days (SD 1.747)
- No significant difference ($p=0.13$) in mean LOS between spinal (3.25 days, SD 1.475) vs GA (3.81 days, SD 2.815)

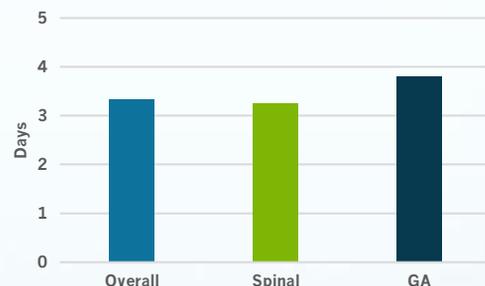


Figure 3. Mean LOS (days) overall and in patients who underwent spinal vs GA.