Paper #19

Evaluating Success of Perioperative Self-Guided Meditation in Reducing Sleep Disturbance After TKA

Michael S. Cremins, PhD, Robert Belniak, MD, Rebecca Teng, BA, Smitha S. Vellanky, MS

Introduction: Disruptions in sleep are a frequent complaint after total knee arthroplasty (TKA). These disturbances are multifactorial, ranging from pain to circadian rhythm disruption. Most sleep disturbances improve within 4-6 weeks of surgery but may contribute to the pace and quality of recovery. The purpose of this study was to evaluate the effectiveness of self-guided meditation for improving sleep hygiene after TKA.

Methods: Primary unilateral TKA patients between August 2019 and March 2020 were exposed to a meditation video 2 weeks preoperatively to 2 weeks postoperatively through a patient-engagement platform. Patients were given an institutionally designed questionnaire about their sleep patterns. T-tests were performed to compare changes in bedtime, wake-time, total sleep time, and Likert responses for general and pain-related sleep between video and non-video groups. Anesthesia, multimodal analgesia, and rehabilitation pathways were standardized.

Results: A total of 381 patients (49% female) across 5 surgeons were evaluated. The mean age was 68 years (95% CI: 67.07-68.76). Forty patients failed to watch the video completely. No associations were found between age, gender, or surgeon and the tested outcome variables. The mean preoperative actual sleep time was 396 minutes (95% CI: 388-440 minutes). Postoperatively, the video group improved an average of 52 minutes more than the non-video group (95% CI: 49.8-52.8 minutes, $p<0.001$). Postoperatively, patients tended to shift bedtimes to an earlier hour, but this was not significantly different between groups ($p=0.995$). Wake-times did not alter postoperatively. The video group showed significant decreases in sleep awakenings ($p<0.001$, but not pain-related awakenings ($p=0.528$).

Conclusions: Sleep hygiene is an important component of TKA recovery. The results reveal that adding patient-engagement measures, such as guided self-meditation techniques via video, improves actual hours slept and decreases awakenings, but has little impact on pain-related awakenings. Further study is needed to understand patient pain levels and opioid consumption.

Notes