

Intraoperative application of cooled radiofrequency to reduce post-operative pain following total knee arthroplasty

Jonathan Liew,
Lucy Salmon,
Rajat Mittal,
Leo Pinczewski



Presented:
AOA NSW Branch Annual Scientific Meeting, Hunter Valley 2023

Published: [The Knee](#) January 2024



NORTH SYDNEY ORTHOPAEDIC & SPORTS MEDICINE CENTRE



MATER HOSPITAL SYDNEY
A FACILITY OF ST VINCENT'S HEALTH AUSTRALIA

Introduction:

Total Knee Arthroplasty (TKA) but can be associated with significant pain in the early postoperative period. Cooled radiofrequency ablation (CRFA) has reported to reduce knee OA pain by targeting the periarticular nerves. The objective of this pilot study was to assess the effectiveness of intra-operative



CRFA for reducing pain and opiate use after TKA.

Methods:

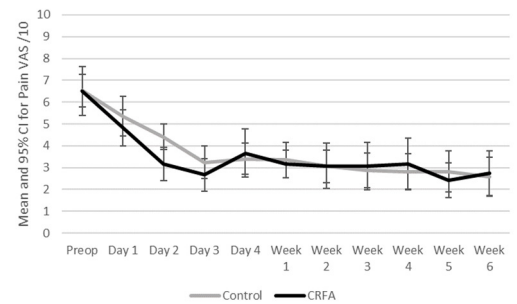
This was a non randomised prospective study with control group. Participants were sequentially recruited preoperatively and underwent TKA, with CRFA to 6 targeted sites prior to cementing of implants, and were compared to controls who underwent TKA without CRFA. The primary outcome was Day 3 pain scores, and secondary outcomes included week one pain scores, and opiate use up to six weeks post-operative.

Results:

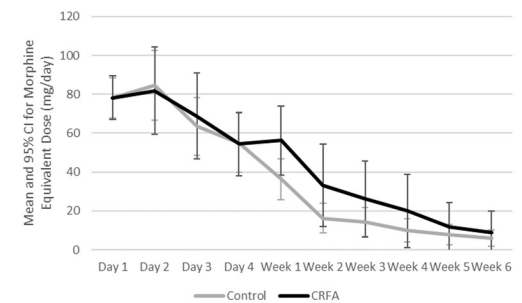
17 participants were recruited to the control group and 12 were recruited to the CRFA group. There was no significant difference in demographics or baseline pain scores between the groups.

On day 2 the CRFA group had a lower mean pain VAS score of 3.2 compared to 4.4 in the control group ($p = 0.03$). The mean post operative VAS pain

score did not differ between the groups for Day 1, 3, 4, or any other time points up to 6 weeks. (Fig 2)



There were no significant reduction in opiate use in the CRFA group compared to the control (Fig 3). There were no adverse events.



Conclusion:

In this pilot study, the use of peri-operative CRFA during total knee arthroplasty did not significantly reduce post-operative pain scores nor opiate consumption compared to controls. Given that the mode of action is a thermally induced neuropraxia, the effects of CRFA should be experienced immediately after application. Over the first week, there was a mean 10 % difference in daily pain scores between the CRFA group and controls.

This study was generously supported by



FRIENDS OF THE MATER