POSTER PRESENTATIONS

PP10

The Pain and Knee Range of Motion in Post-Total Knee Arthroplasty Patients Following Pulsed Ultrasound with Low-intensity

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ABSTRACT

Background and Objectives: Pulsed ultrasound, combined with other physiotherapy treatment, helps reduce inflammation and improve joint function in total knee arthroplasty (TKA) patients. Nevertheless, the effects of low-intensity pulsed ultrasound on post-TKA patients remains inadequately explored with limited documented evidence. This study aimed to assess the recovery of pain and knee flexion range of post-TKA patients following low-intensity pulsed ultrasound. **Methods:** An assessor-blinded quasi-experimental study was conducted among TKA patients at a university medical centre. Participants were alternately allocated to either the experimental group (low-intensity pulsed ultrasound-added conventional physiotherapy; n=16), or the control group (conventional physiotherapy alone; n=16). The intervention was conducted for 3 weeks (4 times in the first week post-TKA and once a week for the following 2 weeks). Pain and knee flexion range were measured at baseline and 1-week follow-up after intervention. Data analysis employed paired t-test and independent t-test. **Results:** The experimental group experienced a significant decrease in pain and improved knee flexion range after the intervention ($p<0.01$). The experimental group exhibited significantly less pain [mean (SD)=1.64(1.40) vs 3.40(1.50), $p<0.01$] and greater knee flexion range [mean (SD)=105.57(8.99) vs 87.67(11.08), $p<0.01$] than control group at the 1-week follow-up after the intervention. **Conclusion:** Low-intensity pulsed ultrasound, in combination with conventional physiotherapy, enhances the recovery of pain and knee flexion range for post-TKA patients. The findings suggest that low-intensity pulsed ultrasound may serve as a potential adjunct treatment for acute TKA patients due to knee osteoarthritis, as no adverse effects were reported.

Keywords: Total knee arthroplasty; low-intensity pulsed ultrasound; pulsed ultrasound; pain; knee flexion; range of motion

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