Comparative Study of Perioperative Analgesic Techniques in Total Knee Arthroplasty in Measuring Analgesia and Functional Outcomes

Primary Author: Phani Paruchuri MD
Anaheim regional medical center

Co-Authors: laxmisrinivas Paruchuri, MS(Orthopedics); suryateja Paruchuri, MBBS; venkata paruchuri, BS;

We have studied the perioperative analgesic pathways for total knee arthroplasty and their impact on the perioperative pain control, impact on physical therapy and functional outcomes at immediate, 3 months and 6 months periods. The modalities studied are IV PCA, Periarticular infiltration techniques, and regional techniques such as femoral blocks, saphenous blocks, spinal narcotic and epidural infusion techniques. In this study 40 patients were selected into each category.

The choice of analgesic pathways were selected on the basis of patient's choice, surgeons preference and clinical relavance.

The observations done in the perioperative period, 1 week, 3 months and 6 months periods. The outcomes were measured in the form of pain relief, patient comfort, efficacy of physical therapy, range of movements, quadriceps untion, and functional outcomes of the procedure.

Perioperative pain relief was found to be superior with epidural infusions, and spinal narcotics where the pain scores were in the range of 1 to 2. Femoral blocks have pain scores in the range of 3 to 4. Saphenous blocks have a pain scores of 4 to 5 and they required supplemental analgesic. Periarticular infiltration cases recorded pain scores of 5 to 6. IV pca cases had pain scores of 5 to 7 and required multimodal supplementation.

Quadriceps weakness was minimal with saphenous blocks, spinal narcotics and IV pca groups.

Nausea, vomiting and pruritis were high in the spinal narcotics group, and IV pca group.

Physical therapy was better with saphenous blocks fallowed by other modalities.

Functional outcomes including range of movements, muscle function, and daily activities observed at 3 months and 6 months showed no statistically significant differences in any of the modalities studied..

Functional outcomes were observed to be different in surgical approaches but that factor was not included in the current study.