NEURO RESOURCE GROUP

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Poster Presentation

NON-INVASIVE INTERACTIVE NEUROSTIMULATION (INTERX®) AS AN ADJUNCT FOR PAIN CONTROL IN PATIENTS FOLLOWING TOTAL KNEE ARTHROPLASTY: A RANDOMIZED, PLACEBO CONTROLLED TRIAL

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Total knee arthroplasty (TKA) is a painful procedure that has seen the postoperative implementation of a number of strategies to advance patient comfort and early mobilization. The aim of postoperative analgesia is to make patients as comfortable as possible with the lowest possible morbidity from analgesic modalities, such as cardiorespiratory or central nervous system depression.

Transcutaneous electrical nerve stimulation (TENS) has been used to treat chronic pain syndromes but clinical trials have demonstrated limited effectiveness in the treatment of postsurgical pain. Recently a more powerful form of electrical stimulation, called Non-invasive Interactive Neurostimulation (InterX®) has demonstrated significant pain relief in patients following hip surgery and ankle fractures. A randomized, placebo controlled, blinded trial was designed to evaluate the utility of InterX® after TKA

50 patients needing primary knee replacements were recruited for this study. The patients were randomly allocated into active InterX and placebo InterX® groups. The placebo group received treatment using a sham device which did not provide active electrical stimulation. The active group received two InterX® treatments per day (lasting 20 minutes each), once they were admitted to the rehabilitation center which was 72 - 96hrs following surgery. The study was designed to measure the impact on rehabilitation outcomes such as pain, pain medication intake and the number days to discharge. It can be expected that if a pain relief adjunct is used and is successful, the patients would experience reduced medication needs or reduced pain scores and possibly both. Medication was measured on a morphine equivalence scale.

Results: Males took more medication than females in both the active and the sham groups. However, there was a reduction of medication in the active groups compared to sham. While still maintaining a low pain score comparable with sham patients taking more medication, male patients in the active group reduced their pain medication intake by 55% and female patients reduced their medication intake by 13%. This averaged out as a 25% reduction when the groups were combined. Previous studies have demonstrated that a 25% reduction in morphine can reduce medication related side effects by up to 66%. Patients in the active group were discharged on average one whole day earlier than the sham group. We conclude that this technology warrants further investigation and there is use for InterX® in the postoperative management of pain after knee arthroplasty as side effects from drugs often inhibit the rehabilitation process. The financial implications of reduced rehabilitation time will be of significant value as healthcare costs come under greater scrutiny and pressures.