[PR1-102] A Randomized Trial of Amitriptyline versus Gabapentin for Neuropathic Pain in Children

[1]Brown S, [1]Amaria K, [1]Campbell F, [1]Johnston B, [2]McGrath P
[1]The Hospital for Sick Children , Toronto , Ontario, Canada; [2]Pain Innovations Inc , London , Ontario, Canada

---

Introduction and Aims
Treatment of neuropathic pain and complex regional pain syndrome requires a multimodal approach of pharmacologic, physical, and psychological therapies. While amitriptyline and gabapentin are our front line drugs for treating neuropathic pain, no studies have yet compared them directly to determine which drug might be better for relieving pain, disability and sleep disturbances.

Objectives
Our primary study objective was to compare the efficacy of gabapentin and amitriptyline for treating neuropathic pain in children in a randomized controlled trial (RCT). Secondary objectives were to evaluate changes in children's disability and sleep.

Methods
Eligible participants ranged from 8 to 17 years of age. Diagnosis of neuropathic pain (pre 2011 NP classification) was made at The Hospital for Sick Children's Chronic Pain Clinic. Electrocardiograms were performed on all patients prior to study to rule out conduction abnormalities. Patients were prescribed a regimen of pharmacologic, physical, and psychological therapy. Patients received either gabapentin (300 mg tid) or amitriptyline (10 mg qhs) with capsules matched for size and dosing regimen matched with appropriate placebos for a 6-week, triple-blind (patient, physician, data analyst) RCT. Patients completed weekly interviews to obtain outcomes and attended an in-hospital interview at 6 weeks. Primary outcome was a change in usual (i.e., past week) pain intensity from baseline to 6-weeks as measured by an 11-point Colored Analog Scale.

Results
Thirty-four patients (82% female) were randomized to amitriptyline or gabapentin. Two patients allocated to the amitriptyline group were ineligible due to a contraindicated condition identified at start of trial. Three participants were discontinued from gabapentin and amitriptyline groups (2 and 1, respectively) due to adverse events deemed unrelated to study medications. The primary analysis was based on 29 patients having completed the study. Mean pain intensity at baseline was comparable for 2 groups: 6.5±1.4 for amitriptyline and 5.3±2.6 for gabapentin. At the end of the 6-week trial, mean usual pain intensity was 5.0±3.0 for amitriptyline (a difference of -1.5 from baseline) and 3.3±2.4 for gabapentin (a difference of -2.0 from baseline). Usual pain scores did not differ significantly between groups ($p > .05$, independent sample t-tests).

Discussion and Conclusion
Based on our data, our standard dose of amitriptyline and gabapentin are effective in reducing usual pain intensity ratings in a 6 week trial for children and adolescents with neuropathic pain.

Funding –Canadian Institutes of Health Research New Emerging Team Grant (GHL - 63209)
