GABAPENTINOIDS ASSOCIATED WITH LOWER EXPLANTATION RATE IN 203 PATIENTS WITH SPINAL CORD STIMULATION FOR FAILED BACK SURGERY SYNDROME

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DISCLOSURES

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Failed back surgery syndrome (FBSS) = persistent pain after lumbar spinal surgery (30%–46% of lumbar fusions and 19%–25% of discectomies.)

The pharmacological treatment of FBSS is based on gabapentinoids and antidepressants. Spinal cord stimulation (SCS) is a safe and cost-effective treatment for selected patients with FBSS.

We analysed retrospectively gabapentinoid use in 203 consecutive FBSS patients treated with SCS in our tertiary hospital during a 17-year period.

METHODS

Clinical data was systematically collected from medical records. Gabapentinoid, TCA, SNRI, benzodiazepine and opioid purchases were retrieved from Social Insurance Institution of Finland.

We studied the purchase data encompassing the two years before and after SCS device implantation. Medication use was defined as two or more purchases during the period.
RESULTS

Neuropathic pain medication use

Of the 203 patients included in the study, 76 (37%) were using gabapentinoids preoperatively. After one-week trial, the SCS electrode was removed in 47 patients. Gabapentinoid use was not associated with trial success. SCS implantation didn’t effect gabapentinoid use.
RESULTS

Opioid dose reduction

Gabapentinoid users could significantly more often discontinue opioids or reduce their dose >50% (logistic regression: OR 5.7, CI 95% 1.4-23, p=0.015).

Patients using opioids over 40 MME /day before SCS implantation could significantly less often discontinue opioids or reduce their dose >50% (OR 0.2, CI 95% 0.05-.87, p<.032)
Explantations

Gabapentinoid users experienced significantly fewer explantations during the two-year follow-up (multivariate Cox regression; HR 0.18, CI 95% 0.04–0.81, \(p=0.026\)).

In contrast, patients with opioid use over 40 MME/day after implantation had significantly more explantations (HR 6.7, CI 95% 2.5-18, \(p<0.01\)).
DISCUSSION

Many neurotransmitters have been linked to the SCS effect, including inhibitory neurotransmitters and excitatory neurotransmitters.

The SCS effect on inhibitory pathways presents a possibility of augmenting pharmacological effects of stimulation.

Our results are in line with previous rodent studies, suggesting that gabapentinoids might have a beneficial effect on SCS that cannot be observed with gabapentinoids alone.


Cui JG, Meyerson BA, Sollevi A, Linderoth B. Effect of spinal cord stimulation on tactile hypersensitivity in mononeuropathic rats is potentiated by simultaneous GABA(B) and adenosine receptor activation. Neurosci Lett. 1998;247(2-3):185-188.
The use of gabapentinoids was associated with a lower spinal cord stimulator explantation rate and a higher chance of over 50% opioid reduction. This indicates that patients with SCS may benefit from concomitant use of gabapentinoids. Prospective randomized trials would be warranted to verify this hypothesis.