COMPARISON OF THE EFFICACY OF GABAPENTIN AND PREGABALIN FOR NEUROPATHIC PAIN IN PATIENTS WITH SPINAL CORD INJURY: A CROSSOVER STUDY

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ABSTRACT

Objectives: To compare the efficacy and side effects of gabapentin and pregabalin for the treatment of neuropathic pain (NP) in spinal cord injury (SCI).

Methods: Twenty eight patients were included in the study. The patients were randomized to receive pregabalin or gabapentin. VAS (Visual analog scale) pain score, neuropathic pain scale (NPS), Lattinen test (LT), Beck Depression Inventory (BDI) pain diary measures were used for the patient evaluation. We assessed patients at 4th and 8th weeks. Treatment groups were crossed over after 2 weeks of wash-out period to receive the other treatment.

Results: At the end of the study there was significant improvement in VAS both with gabapentin and pregabalin (p<0.001). Statistically significant difference was present during the first 4 weeks in the assessment with VAS as for pregabalin group compared to gabapentin group (p<0.05). But after 8 weeks of treatments the significance disappeared between the pregabalin and the gabapentin groups (p>0.05). In NPS, and LT parameters, no difference was present between the two study groups before or after the treatment (p>0.05). In both groups no significant improvement was seen in emotional status as assessed with BDI (p>0.05). Frequency of side effects and exclusion from the study due to side effects were higher for the pregabalin group but it was not significant between the groups (p>0.05).

Conclusions: It is concluded that both drugs are effective and safe for the treatment of NP due to SCI but no difference exist between the two drugs. We are in the opinion that large studies that include more patients and placebo control should be carried out for more accurate data about this topic.

Key words: Spinal cord injury, neuropathic pain, gabapentin, pregabalin.

Introduction

Neuropathic pain (NP) is pain initiated or caused by a primary lesion or dysfunction in the nervous system11. Spinal cord injury (SCI) is one of the leading causes of NP2,3. It is estimated that NP at or below the level of the injury occurs in up to 40% of patients with SCI2,14.

Various treatments for chronic neuropathic pain have been proposed, such as opioids, anti-depressants, anti-convulsants, baclofen and ketamine5,6,7,8.

Gabapentin and pregabalin are among drugs used in this treatment. Both drugs are anticonvulsants, and derivate of the inhibitory neurotransmitter gama amino-butyric acid (GABA). There are several studies about gabapentin for the treatment of NP in SCI; however it’s reported that evidence for its efficacy is controversial8,9,10,11,12. There are two clinical studies about pregabalin13,14. But, there are no studies, especially randomized controlled trials, comparing gabapentin and pregabalin in treating NP in SCI.

We aimed to perform a study that compares the efficacy of gabapentin and pregabalin for the patients with SCI.

Materials and methods

This study was performed on total of 28 patients (21 men, 7 women) with spinal cord injury who were followed up at the physical medicine and rehabilitation policlinic during September 2008 to May 2009. The patients were informed, and their
written consents were obtained. The study was designed as a prospective, randomized, single blind, cross-over study. Ethical committee has approved the study.

**Inclusion criteria were as follows**
- The patients with neuropathic pain due to the traumatic or non-traumatic spinal cord injury
- Patients above 18 years old and below 70 years old
- No comorbid medical conditions
- Patients who previously did not or at present do not receive any of the drugs that will be used in the study.

The physical examination and detailed neurological examination were performed.

**Evaluation criteria**

VAS (Visual analog scale), pain diary, neuropathic pain scale, Lattinen test (LT) and Beck Depression Inventory (BDI) were used as efficacy parameters for the patient evaluation.

The level of the pain was questioned with VAS\(^{(15)}\). Patients with an average VAS pain score of 4 and above during the last week were included in the study. Total of 18 pain diaries (each one is for a week) were given to the patients.

Neuropathic pain symptoms were evaluated with NPS\(^{(16)}\). The neuropathic pain scale was the first measure specifically developed to assess neuropathic pain. It includes an initial set of directions (orientating the respondent to consider how pain has different qualities) followed by a series of items that assess two global pain domains (pain intensity, and unpleasantness, six specific pain qualities (sharp, dull, sensitive, hot, cold, and itchy pain), and two spatial qualities (deep and surface pain). Respondents rate the intensity or severity of each descriptor item on a scale from 0 to 10, with 0 being ‘no…’ or ‘not…’ and 10 corresponding to ‘the most… sensation imaginable’\(^{(16)}\). LT was performed to evaluate the intensity of pain, frequency of pain, disability due to pain and sleep disturbance\(^{(17)}\).

The mood of the patients was evaluated with BDI\(^{(18)}\). The answers were recorded for each patient before treatment (0 week), at 4th week and after treatment (8th week). The patient assessments were performed by a blinded investigator.

**Treatment Program**

Twenty eight appropriate patients were randomized to two groups (Table 1). Pregabalin (PG) and Gabapentin (GP) were initiated to the patients at recommended initial doses after the baseline evaluation.

<table>
<thead>
<tr>
<th>REGISTRATED PATIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=28)</td>
</tr>
</tbody>
</table>

Pregabalin group (n=14)
Total of 8 weeks of follow up period (4 week titration-4 week stable dose)
One patient discontinued due to side effects
2 patients discontinued due to the side effects

Gabapentin group (n=14)
Total of 8 weeks of follow up period (4 week titration-4 week stable dose)
One patient discontinued due to side effects
2 patients discontinued due to the side effects

After 2 weeks of washout period, treatment groups were crossed over to receive the other treatment.

<table>
<thead>
<tr>
<th>Total patients completed study (n=28)</th>
</tr>
</thead>
</table>

Pregabalin group 28\(^{(15)}\)
Total of 8 weeks of follow up period (4 week titration-4 week stable dose)
2 patients discontinued due to the side effects

Gabapentin group 28\(^{(15)}\)
Total of 8 weeks of follow up period (4 week titration-4 week stable dose)
All patients completed this portal of the study.

Table 1: Study profile. Total of 28 patients were included in the study. 19 patients completed two periods of the study.

The recommended initial doses for gabapentin:
Day 1 300 mg/day, Day 2 600 mg/day,
Day 3 to Day 7 900 mg/day, at the end of 2\(^{nd}\) week 1800 mg/day, at the end of 3\(^{rd}\) week 2700 mg/day, at the end of 4\(^{th}\) week the maximum dose of 3600 mg/day. The daily oral dose was given in three divided doses.

The initial dose for pregabalin: for the first week 150 mg/day, for the second week 300 mg/day, for the third week 450 mg/day, for the forth week the maximum dose of 600 mg/day. The daily oral dose was given in two divided doses.

The maximum doses were titrated in the first 4 weeks. The routine blood tests were evaluated at the end of 4\(^{th}\) week. The efficacy parameters were reevaluated. The stable doses were used during the four weeks after titration. The treatments were discontinued following the reevaluation of the parameters and routine biochemical tests at the end of the 8\(^{th}\) week. Treatment groups were crossed over after 2 weeks of wash-out period to receive the other treatment.

**Statistics**

SPSS for Windows 13.0 package statistical program (SPSS Inc. Chicago IL USA) was used for statistical measurements. The distribution of the demo-
graphic characteristics of the patient and control groups was performed by definitive statistical methods. The significance of the intra-group, pre- and post-treatment differences was evaluated by paired t-test. When evaluating the difference between two groups, Student’s t test was used for the variables with normal distribution, and Mann Whitney U test was used for the variables without normal distribution. The frequency of side effects was evaluated by Chi-square test. p<0.05 values were accepted as statistically significant.

Results

Nine of the 28 patients didn’t want to continue the study by their own will or because of the side effects. The average age of the patients was 42.8 ± 12.3 years. The average length of time since the spinal cord injury occurred was 35.3±28.8 months, and average duration of neuropathic pain was 29.3±25.8 months. 14 patients (74%) were men, and 5 patients (26%) were women. Fifteen of the injuries were traumatic (79%), 3 were iatrogenic (16%) and one was related to myelitis (5%). Three of the patients were tetraplegic (16%), 16 (84%) were paraplegic.

When the neurological levels were considered, 6 patients were complete, and 13 patients were incomplete according to ASIA classification.

According to the VAS pain scores obtained from the pain diaries of the patients, the average VAS scores at the beginning of the treatment was 7.78±1.27 for the gabapentin group, and 8.05±1.26 for the pregabalin group (Table 2). No statistically significant difference was observed between the VAS pain scores at the beginning of the treatment (p>0.05).

Table 2: Visual Analog Skale (VAS) pain scores.

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline</th>
<th>p</th>
<th>4th Week</th>
<th>p</th>
<th>8th Week</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gabapentin</td>
<td>7.78±1.27</td>
<td>NS</td>
<td>4.36±1.30</td>
<td>NS</td>
<td>3.57±1.21</td>
<td>NS</td>
</tr>
<tr>
<td>Pregabalin</td>
<td>8.05±1.26</td>
<td></td>
<td>3.68±1.15</td>
<td></td>
<td>3.36±1.11</td>
<td></td>
</tr>
</tbody>
</table>

However significant improvement was observed in the average VAS pain scores in both of the groups at the 4th and 8th weeks. The average VAS was 4.36±1.30 at the 4th week and 3.57±1.21 at the 8th week for gabapentin group. The average VAS was 3.68±1.15, 8 at 4th week and 3.36±1.11 at 8th week for pregabalin group.

A significant difference was observed between the two drugs concerning decrease of VAS pain severity at the forth week (p=0.045), however no significant difference was found at 8th week (p>0.05). (Figure 1).

Overall NPS scores throughout the treatment are given in detail in Table 3. Both gabapentin and pregabalin did not affect NPS scores for cold, sensitive varieties of NP (p>0.05). All other types of NP decreased significantly with GBP/PRG at the fourth week compared to baseline and remained so at eighth week (p<0.05).

The improvement of the NP intensity scale during 0-8 weeks was 52.1%±18.1 in the gabapentin group and 54.5±17.8 in the pregabalin group. No significant difference in pain intensity was found between treatment groups (p<0.05).

The difference in the scores of unpleasant sensation was similar for both of the groups. It was determined as 50.9% ±17.4 for gabapentin group and 50.9% ±17.7 for pregabalin group at the end of the 8th week.

Figure 1: The change of average VAS pain score by time.

Figure 2: The characteristics and frequency of pain.
When the percent of improvement in different pain characteristics is considered, pronounced improvement was observed in the stinging, burning, striking, electric shock, ache and disseminated pain for gabapentin group; and tingling, numbing, throb-bing, severe, cold, sensitive, sensible and cramp types of pain for pregabalin group. It was observed that gabapentin is more effective for superficial pain and pregabalin for deep pain.

The improvement in pain severity at lattinen test was 57.6% ± 15.77 for gabapentin group, and 55.2%±21.37 for pregabalin group. No significant difference in lattinen pain severity parameter was found between treatment groups (p>0.05).

The improvement of the pain frequency was 21.41±28.09% for gabapentin group, and 28.0 ± 26.3% for pregabalin group. No significant difference in lattinen pain frequency parameter was found between treatment groups (p>0.05).

The improvement in the disability due to pain was 62.23% ± 38.4 for gabapentin group, and 68.4%± 39.45 for pregabalin group (Figure 3). No significant difference in lattinen disability due to pain parameter was found between treatment groups (p>0.05).

The improvement in the sleep quality was 73.1% ± 33.4 for gabapentin group, and 87.9%± 21.24 for pregabalin group (Figure 4). No significant difference in lattinen sleep quality scores was found between treatment groups (p>0.05).

The frequency of total side effects was found between treatment groups (p>0.05).

When the observed side effects are considered individually, the most common side effect was drowsiness (29.2%; n=7) for gabapentin group, and it’s followed by somnolence (25%; n=6); and the most common side effect was again drowsiness (48%; n=12) for pregabalin group, and it’s followed by somnolence (44%; n=11). When the frequency of side effects were evaluated by chi-square test, no significant difference was found between treatment groups (p>0.05).

<table>
<thead>
<tr>
<th>Pain Descriptor</th>
<th>Group</th>
<th>Baseline</th>
<th>P</th>
<th>4th Week</th>
<th>P</th>
<th>8th Week</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain intensity</td>
<td>Gabapentin</td>
<td>8.50±1.47</td>
<td>NS</td>
<td>4.21±1.61</td>
<td>NS</td>
<td>3.84±1.64</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>7.44±1.34</td>
<td>3.80±1.59</td>
<td>3.52±1.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp</td>
<td>Gabapentin</td>
<td>4.4±3.86</td>
<td>NS</td>
<td>2.73±2.10</td>
<td>NS</td>
<td>2.49±2.42</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>3.95±3.70</td>
<td>3.26±2.20</td>
<td>3.21±2.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot</td>
<td>Gabapentin</td>
<td>6.89±2.80</td>
<td>NS</td>
<td>5.63±1.94</td>
<td>NS</td>
<td>5.21±1.71</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>4.6±3.02</td>
<td>5.21±1.58</td>
<td>3.60±1.52</td>
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<td></td>
<td></td>
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<tr>
<td>Dull</td>
<td>Gabapentin</td>
<td>8.06±1.91</td>
<td>NS</td>
<td>4.31±2.16</td>
<td>NS</td>
<td>3.94±1.84</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>7.84±1.64</td>
<td>3.94±1.64</td>
<td>3.73±1.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cold</td>
<td>Gabapentin</td>
<td>2.73±3.08</td>
<td>NS</td>
<td>2.05±1.92</td>
<td>NS</td>
<td>2.05±1.87</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>2.6±2.80</td>
<td>1.89±1.76</td>
<td>1.99±1.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensation</td>
<td>Gabapentin</td>
<td>4.6±3.31</td>
<td>NS</td>
<td>3.05±2.17</td>
<td>NS</td>
<td>2.94±2.14</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>4.47±3.11</td>
<td>2.57±1.64</td>
<td>2.52±1.60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sichy</td>
<td>Gabapentin</td>
<td>0.00±0.00</td>
<td>NS</td>
<td>0.00±0.00</td>
<td>NS</td>
<td>0.00±0.00</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>0.00±0.00</td>
<td>NS</td>
<td>0.00±0.00</td>
<td>NS</td>
<td>0.00±0.00</td>
<td>NS</td>
</tr>
<tr>
<td>Unpleasantness</td>
<td>Gabapentin</td>
<td>4.17±1.42</td>
<td>NS</td>
<td>4.68±1.91</td>
<td>NS</td>
<td>4.21±1.87</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>7.94±1.39</td>
<td>4.16±1.48</td>
<td>3.84±1.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deep pain</td>
<td>Gabapentin</td>
<td>7.36±2.98</td>
<td>NS</td>
<td>3.63±2.08</td>
<td>NS</td>
<td>3.73±2.07</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>7.00±2.56</td>
<td>3.76±1.96</td>
<td>3.57±1.70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surface pain</td>
<td>Gabapentin</td>
<td>6.07±2.77</td>
<td>NS</td>
<td>3.42±2.11</td>
<td>NS</td>
<td>3.21±2.01</td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>Pregabalin</td>
<td>6.99±2.75</td>
<td>3.31±1.37</td>
<td>3.10±1.28</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Table 3: Neuropathic Pain Score (NPS).

When the percent of improvement in different pain characteristics is considered, pronounced improvement was observed in the stinging, burning, striking, electric shock, ache and disseminated pain for gabapentin group; and tingling, numbing, throb-bing, severe, cold, sensitive, sensible and cramp types of pain for pregabalin group. It was observed that gabapentin is more effective for superficial pain and pregabalin for deep pain.

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The frequency of total side effects was found between treatment groups (p>0.05).

When the observed side effects are considered individually, the most common side effect was drowsiness (29.2%; n=7) for gabapentin group, and it’s followed by somnolence (25%; n=6); and the most common side effect was again drowsiness (48%; n=12) for pregabalin group, and it’s followed by somnolence (44%; n=11). When the frequency of side effects were evaluated by chi-square test, no significant difference was found between treatment groups (p>0.05).

<table>
<thead>
<tr>
<th>Side Effects</th>
<th>Gabapentin (Patients No.)</th>
<th>Pregabalin (Patients No.)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedation</td>
<td>7 (29.2)</td>
<td>12 (48)</td>
<td>NS</td>
</tr>
<tr>
<td>Somnolence</td>
<td>6 (25)</td>
<td>11 (44)</td>
<td>NS</td>
</tr>
<tr>
<td>Edema</td>
<td>3 (4.2)</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>HSP</td>
<td>1 (4.2)</td>
<td>None</td>
<td>NS</td>
</tr>
<tr>
<td>Constipation</td>
<td>None</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Gait disturb.</td>
<td>1 (4.2)</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Paresthesia</td>
<td>None</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Hepatic dysf.</td>
<td>1 (4.2)</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Cognitive dysf.</td>
<td>1 (4.2)</td>
<td>2 (8)</td>
<td>NS</td>
</tr>
<tr>
<td>Dyspepsia</td>
<td>1 (4.2)</td>
<td>None</td>
<td>NS</td>
</tr>
<tr>
<td>Vertigo</td>
<td>None</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Allergic reaction</td>
<td>None</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td>Nux vom.</td>
<td>2 (8.4)</td>
<td>1 (4)</td>
<td>NS</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16 (66.7)</td>
<td>21 (88)</td>
<td>NS</td>
</tr>
</tbody>
</table>

Table 4: Side Effects.
Two patients in gabapentin group (8.4%) and 5 patients (20%) in pregabalin group could not complete the study due to the side effects. No significant difference in the rate of discontinuation from the study due to the side effects was found between treatment groups (p>0.05).

One patient had to discontinue the study due to the sudden, serious hemoptysis in gabapentin group; and 1 patient had to discontinue the treatment due to gastroesophageal reflux. One patient discontinued the study due to serious peripheral edema, two patients discontinued due to drowsiness and somnolence, one patient discontinued due to allergic rashes, and one patient discontinued to the gait disturbance in pregabalin group.

The average daily dose was 3078±811 mg/day for gabapentin, and 434±172 mg/day for pregabalin in the patients who completed the study.

Twelve (63.2%) of the patients who completed the study in the gabapentin group has reached the maximum dose (3600 mg/day), and 7 patients (36.8%) didn’t use the maximum dose. Nine(47.4%) of the patients who completed the study in the pregabalin group has reached the maximum dose (600 mg/day), and 10 patients (53.6%) had to use the submaximal dose.

The monthly cost of the treatment that cause a 1 unit decrease in VAS pain score was 43.6 TL (732 mg/day dose) for gabapentin, and 46.3 TL (92 mg/day dose) for pregabalin.

Discussion

In this study, both gabapentin and pregabalin provided significant improvement in pain and life quality parameters. Pregabalin provided more improvement in the pain severity as compared to gabapentin at the 4th week, and two drugs provided the similar rate of improvement at the 8th week. There were no significant differences in the rate of side effects and the rate of discontinuation due to side effects between two drugs.

The treatment of neuropathic pain in spinal cord injury is a current issue. However there are few studies about this subject. Also, there are no clinical studies comparing gabapentin and pregabalin for treating NP in the literature.

There are three randomized controlled studies about the efficacy of gabapentin on NP in the patients with SCI. The first study was performed by Tai et al. No difference was found in efficacy during the gabapentin and placebo treatment. The second randomized controlled study about gabapentin was performed by Levendoglu et al. VAS decreased by 10.3% in the placebo, and 60.7% in the gabapentin group, at the end of the treatment. This is a very significant ratio for efficacy. The third study was performed by Rintala et al. In this study, the effects of amitriptyline and gabapentin on neuropathic pain were evaluated. It was observed that, amitriptyline was effective than gabapentin and placebo. No difference was found between gabapentin and placebo.

However in our study, 19 patients completed the study. When the percent of improvement in pain is considered, the average was 43.7 in gabapentin group at 4th week, and 53.7 at 8th week. These values were higher (11.3% for the patients with higher depression scores, and 13.9% for the patients with lower depression scores) than those of the study performed by Rintala et al. and lower than those of the study performed by Levendoglu et al (60.7%).

The side effects in the gabapentin group were drowsiness-fatigue, sedation, edema, vertigo and xerostomia. The most observed side effects for gabapentin group in our study were similar to those of the other studies. The only difference was in a patient who developed hemoptysis; there were no hemoptysis case reported in the literature. This symptom was disappeared 3 days after the discontinuation of the treatment. The rate of the patients who discontinued the study due to the side effects or due to the inefficiency was 31.6% for gabapentin, 34.2% for placebo, and 26.3% for amitriptyline. In our study, of 24 patients on gabapentin 8.4% discontinued the study due to the side effects, one of the patients discontinued the study by their own will.

There are two randomized controlled clinical studies about pregabalin performed on patients with NP in SCI. In the study performed by Siddall, pregabalin decreased the severity of pain by 29.3% and placebo by 6.8% as compared to baseline. Vranken found that, pregabalin decreased the severity of pain by 25%. In our study, the average decrease in the pain severity with pregabalin was 53.5% at 4th week and 57.4% at 8th week. There was significantly more decrease as compared to gabapentin especially at 4th week. In the study, consistent with previous studies, no significant differences in the depression scores were found in gabapentin and pregabalin at the end of the treatment.

In our study, the sleep parameters were improved significantly as compared to baseline in both of gabapentin and pregabalin groups.
scores of disability due to pain were improved significantly as compared to baseline in both of gabapentin and pregabalin groups.

In the study performed by Vranken, the rate of discontinuation due to the side effects was 15% in both of the groups (13). In the study performed by Siddall, this rate was 13% for placebo, and 21% for pregabalin (14). In our study, 20% of the patients had to discontinue due to the side effects in the pregabalin group. The most observed side effects in the literature are somnolence, drowsiness, confusion, cognitive dysfunction and nausea. We observed that, drowsiness was the most common side effect at pregabalin treatment, and it was followed by somnolence, cognitive dysfunction, vertigo, constipation, edema and hepatic dysfunction.

Our study had some limitations. Firstly, we had no placebo control group. Secondly our study had a small sample size.

When the cost of the treatment is considered, the monthly cost of the treatment that cause a 1 unit decrease in the pain score was (0.029$) for gabapentin, and 46.3 TL(0.030$) for pregabalin (according to the prices of 2009 Turkey Pharmacist Association).

In conclusion, both gabapentin and pregabalin improved pain significantly. A statistically significant difference in the improvement of pain was observed in favor of pregabatin at the forth week, however no significant difference between groups was found at 8th week. When the frequency of side effects and exclusion from the study due to side effects is considered, no differences were found between drugs. When the treatment costs, tolerability, and the efficacy at 8th week is considered, there were no significant differences; therefore it is concluded that both drugs are very effective and safe for the treatment of NP due to SCI and none of the drug is superior to other. However we are in the opinion that large studies that include bigger populations and placebo control should be carried out for more accurate data about this topic.

References


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