

<b>Author Year Country PEDro Score Research Design Total Sample Size</b>	<b>Methods</b>	<b>Outcome</b>
<p>Norrbrink &amp; Lundeberg 2009 Sweden RCT PEDro=8 N=35</p>	<p><b>Population:</b> Mean age=51.3 yr; Gender: males=28, females=7; Level of injury: tetraplegia=16, paraplegia=19; Type of pain=neuropathic. <b>Treatment:</b> Patients were randomized in a 2:1 ratio (tramadol/placebo) and treatment was administered for 4 wk. Both patients and staff were blind to the treatments. Each patient was given 50 mg tramadol or placebo 3x/day. The daily dose was increased by one tab for 5 5 days to a maximum dose of 8 tab. <b>Outcome Measures:</b> Patient Global Impression of Change; Multidimensional Pain Inventory</p>	<ol style="list-style-type: none"> <li>1. Significant differences were seen in between group pain ratings (<math>p&lt;0.05</math>).</li> <li>2. Patient Global Impression of Change rating was significantly higher in the tramadol group than the control group.</li> <li>3. Significant improvements were seen in ratings of anxiety, global life satisfaction and sleep quality (<math>p&lt;0.05</math>).</li> <li>4. No significant changes were seen in pain pleasantness, depression, or on the MPI scales pain interference, perceived life control, affective distress or social support.</li> </ol>
<p>Attal et al. 2002 France RCT PEDro=10 N=15</p>	<p><b>Population:</b> SCI: Mean age=54.9 yr; Gender: males=6, females=9; Mean duration of pain=5 yr; Type of pain=neuropathic and nociceptive. <b>Treatment:</b> Initially, patients received intravenous morphine titrated up to the maximal tolerated dosage using successive bolus injections of 2 mg morphine every 10 minutes. Double blind phase began 3 wk after titration phase. <b>Outcome Measures:</b> Spontaneous pain, tactile allodynia, psychophysical measurements, mechanical detection and pain thresholds, thermal detection and pain.</p>	<ol style="list-style-type: none"> <li>1. Spontaneous pain scores decreased immediately after the end of the infusion of morphine and placebo for up to 120 min in both groups.</li> <li>2. The effects of the morphine did not differ significantly from those who were given the placebo post injection.</li> <li>3. Those who reported pain relief from the treatment was higher (3x) after the morphine than after the placebo was given from 15-60 min post injection.</li> <li>4. Burning pain was weakened by the morphine in seven patients and by placebo in four patients.</li> <li>5. When looking at the effects of morphine on mechanical allodynia it could be seen that the morphine produced a reduction in intensity. The saline treatment did not have an effect.</li> <li>6. Morphine only significantly reduced dynamic mechanical allodynia (<math>p&lt;0.01</math>).</li> </ol>
<p>Eide et al. 1995 Norway RCT PEDro=7 N=9</p>	<p><b>Population:</b> Age=25-72 yr; Gender: males=8, females=1; Level of injury: cervical, thoracic; Severity of injury: AIS: A-D; Onset of pain: &lt;6 mo post injury, Length of pain: 14-94 mo; Type of pain=neuropathic. <b>Treatment:</b> Ketamine hydrochloride, alfentanil or a placebo was given as combination of bolus and continuous intravenous infusions. The bolus dose was administered for 60 sec and the continuous intravenous infusion started simultaneously and was delivered by IVAC syringe pump. This lasted 17-21 min while the testing was performed. <b>Outcome Measures:</b> Visual Analogue Scale (VAS).</p>	<ol style="list-style-type: none"> <li>1. Freidmann's two-way analysis by ranks showed differences between the various treatments (<math>p=0.005</math>).</li> <li>2. The effect of alfentanil and ketamine was also significant (<math>p&lt;0.01</math> and <math>p&lt;0.04</math> respectively).</li> <li>3. No significant differences were noted between the actions of ketamine and alfentanil (Wilcoxon <math>p=0.19</math>).</li> <li>4. Significant differences were noted between the treatment groups (<math>p=0.008</math>). It was also noted that allodynia was not more changed by ketamine than by alfentanil (Wilcoxon <math>p=0.93</math>).</li> <li>5. Alfentanil reduced wind-up-like pain (<math>p=0.014</math>) compared to the placebo</li> </ol>

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		<p>group. The effect of ketamine on wind-up-like pain was not significantly reduced (<math>p=0.07</math>).</p> <p>5. A high correlation between the serum concentration of ketamine and the reduction of continuous pain (<math>r=0.78</math>, <math>p&lt;0.002</math>) and the reduction of wind-up-like pain (<math>r=0.83</math>, <math>p&lt;0.002</math>) was noted.</p>
<p>Barrera-Chacón et al.  2011  Spain  Pre-Post  <math>N_{start}=57</math>  <math>N_{end}=54</math></p>	<p><b>Population:</b> Age: 46.4 yr, Severity of injury: AIS A=27, B=1, C=10; Type of pain=neuropathic.  <b>Intervention:</b> Participants were provided with oxycodone treatment for neuropathic pain.  <b>Outcome Measures:</b> Visual Analogue Scale (VAS)</p>	<ol style="list-style-type: none"> <li>1. Pain intensity significantly decreased after 3 mo of oxycodone treatment, <math>p&lt;0.001</math>.</li> <li>2. Improvement in sleep and physical activity levels was also seen.</li> <li>3. 83% of individuals were taking adjunct anticonvulsant treatment.</li> <li>4. The most common side effect included constipation (33%).</li> </ol>