Author Year Country Research Design Sample Size	Methods	Outcomes
Kamiya et al. 2014 Japan Cohort N=28	**Population:** Age range=18-35 yr; Gender: male=75%, female=25%; Level of injury: C3-C7; Severity of injury: complete=7%, incomplete=93%, AIS A-D. **Treatment:** In this phase I/IIa clinical trial, all patients received 10 μg/kg/day granulocyte colony-stimulating factor (G-CSF) intravenously for 5 days beginning within 48 hr of injury. Historical records of patients administered methylprednisolone sodium succinate (MPSS) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines served as a control. **Outcome Measures:** The following after 3 months: ASIA motor function, neurological recovery based on AIS, adverse event outcomes. **Chronicity:** Treatment was initiated within 48 hr after injury.	1. ASIA motor score: Overall, patients who received G-CSF recovered significantly more motor function than patients in the historical control group ($p<0.01$). This significant difference remained even after removing patients with complete injuries. 2. AIS: Overall, there was no difference in neurological recovery of one step of the AIS between patients who received G-CSF and the historical control group ($p>0.05$); however, significantly more patients who received G-CSF experienced an improvement of 2 steps than those in the historical control group ($p<0.05$). This significant difference remained even after removing patients with complete injuries. 3. Patients in the historical control group experienced significantly more incidences of pneumonia than patients who received G-CSF ($p<0.05$).
Takahashi et al. 2012 Japan Prospective Controlled Trial N=16	**Population:** Age range=18-75 yr; Gender: male=81%, female=19%; Level of injury: cervical-thoracic; Severity of injury: complete=6%, incomplete=94%. **Treatment:** In this open label phase I/IIa clinical trial, patients received either low dose granulocyte-colony stimulating factor (G-CSF) (5 μg/kg/day) or moderate dose G-CSF (10 μg/kg/day). Treatment was administered intravenously for five days beginning within 48 hr of injury. Historical records of patients administered methylprednisolone sodium succinate (MPSS) according to National Acute Spinal Cord Injury Study (NASCIS) II guidelines served as a control. **Outcome Measures:** The following daily during the first week, 1 month after injury, and 3 months after injury: body temperature, blood data, ASIA motor function, ASIA sensory function (pinprick and light touch). The following after 3 months: Neurological recovery based on the ASIA scale. **Chronicity:** Individuals were treated within 6.4-48 hr of sustaining injury.	1. There were no significant differences in body temperature in either patients who received low dose G-CSF or those who received high dose G-CSF during the first week of hospital stay, 1 month after injury, or 3 months after injury compared to baseline ($p>0.05$). 2. During the first 5 days after administration, there was a significant elevation of white blood cells in both low dose and moderate dose patients compared to their baseline levels ($p<0.01$) that returned to normal after the G-CSF administration ended. There was a significant elevation of C-reactive protein after 1 day in patients who received high dose G-CSF ($p<0.05$) but these levels returned to normal the day after. 3. Patients who received moderate dose G-CSF experienced significantly higher motor function score after 1 day ($p<0.01$), pinprick score after 2 days ($p<0.05$), and light touch score after 2 days ($p<0.05$) that remained significant at every follow up time point. 4. Patients who received low dose G-

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		CSF and patients in the historical control group did not experience significant improvements in motor or sensory function (p>0.05). 5. There were no significant differences in neurological recovery of 1 grade based on the AIS among the 3 groups after 3 months (p>0.05). 6. Patients who received either low or moderate dose G-CSF did not experience significant adverse event outcomes compared to patients in the historical control (p>0.05). There were significantly higher rates of pneumonia in the MPSS historical control group compared to the G-CSF groups (p>.05).