Author Year Country Research Design Score Sample Size	Methods	Outcome
Barratt et al. 2012 Australia RCT PEDro = 9 Level 1b N = 12	Population: Age range: 25-37 yr; Gender: male=9, female=3; Level of injury: C5-C7; Severity of injury: complete=10, incomplete=2; AIS A-B. Intervention: Patients were randomized to receive either bronchodilator therapy (inhaler, 100 µg salbutamol) or placebo (propellant only). Outcome Measures: The following at 10 minutes and 30 minutes after inhalation: FVC, FEV ₁ , and peak expiratory flow (PEF) rate. Chronicity: The median time since injury was 24 (18-35) days.	 After 10 minutes, patients who received the bronchodilator therapy experienced a significant improvement in FVC (p<0.05), FEV₁ (p<0.05), and PEF (p<0.05) compared to patients who received the placebo. After 30 minutes, patients who received the bronchodilator therapy experienced a significant improvement in FVC (p<0.05) and FEV₁ (p<0.05) compared to patients who received the placebo. There were no significant differences between groups with regard to PEF (p>0.05).
	Effect Sizes : Forest plot of standardized mean differences (SMD ± 95%C.I.) as calculated from pre- (baseline) and post-intervention (after 10 minutes) data.	
	Barratt et al. 2012; Bronci	hodilator vs. Placebo
	FEV1	0.63 (-0.23,1.46)
	PEF	0.52 (-0.33,1.37)
	FVC -2 -1.5 -1 -0.5 (Favours Control Standardized Mean D	5.5
Li et al. 2012 China RCT PEDro = 6 Level 1b N = 61	Population: Age range: 39-67 yr; Gender: male=40, female=21; Level of injury: cervical; Severity of injury: complete=27, incomplete=34 AIS A-B. Intervention: Patients were randomized to receive either high-dose ambroxol (990	1. Patients who received high dose ambroxol experienced significantly fewer episodes of pneumonia (p=0.027) and hypoxemia (p=0.047) than patients who received placebo. There were no significant differences with

mg/day for 5 days) or placebo (5% glucose in 500 mL saline for 5 days) after spinal fixation surgery.

Outcome Measures: The following during hospital stay: post-operative pulmonary complications in the form of pulmonary infection, atelectasis, and hypoxemia.

The following after 3 and 5 days in the ICU: arterial blood gas analysis in the form of partial pressure of inspired oxygen in arterial blood (PaO₂), partial pressure of carbon dioxide in arterial blood (PaCO₂), and ratio of arterial oxygen partial pressure to fractional inspired oxygen.

Chronicity: Time since injury not specified.

- regards to atelectasis between groups (p=0.430).
- 2. After 3 days in ICU, patients who received high dose ambroxol had a significantly higher oxygenation index than patients who received placebo (p=0.049). There were no significant differences in PaO₂ (p=0.683) and PaCO₂ (p=0.847) between groups.
- 3. After 5 days in ICU, patients who received high dose ambroxol had a significantly higher oxygenation index than patients who received placebo (p=0.032). There were no significant differences in PaO₂ (p=0.193) and PaCO₂ (p=0.928) between groups.

Effect Sizes: Forest plot of standardized mean differences (SMD ± 95%C.I.) as calculated from pre- and post-intervention data.

