

Interventions Targeting Smoking Cessation for Patients with Chronic Pain: a systematic review

Bruno Saragiotto^{1,2,4}, Steven Kamper^{2,5}, Rebecca Hodder^{1,2}, Luke Wolfenden¹, Hopin Lee^{1,2}, Vinicius Cunha Oliveira³, Priscila Viana Silva⁴, Emma Robson^{1,2}, John Wiggers¹, Christopher Williams^{1,2}

¹School of Medicine and Public Health, Hunter Medical Research Institute, University of Newcastle, Newcastle, Australia.

²Centre for Pain, Health and Lifestyle.

³Universidade Federal dos Vales do Jequitinhonha e Mucuri, Diamantina, Brazil.

⁴Master and Doctoral Program in Physical Therapy, Universidade Cidade de Sao Paulo, Sao Paulo, Brazil.

⁵School of Public Health, Sydney Medical School, The University of Sydney, Australia.

Abstract

Introduction: Smoking is an important risk factor for many chronic pain conditions and can increase the risk of many associated comorbidities (e.g. cancer). Treatment outcomes in smokers are usually worse than non-smokers, making them at risk of non-recovery. Thus, interventions targeting smoking cessation may benefit smokers with chronic pain. **Objective:** The aim of this review is to examine the effectiveness of smoking cessation interventions in chronic pain conditions. **Methods:** We searched CENTRAL, MEDLINE, MEDLINE in Process, EMBASE, CINAHL, AMED, and PsycINFO databases up to August 2017. We included randomised and quasi-randomised controlled trials that included current smokers with chronic pain evaluating the effectiveness of smoking cessation interventions compared with any active or inactive control intervention. Primary outcomes were pain and function, and secondary outcomes were smoking status, quality of life, psychological and cognitive function, and adverse events. We assessed risk of bias using the Cochrane Back and Neck Review Group criteria and quality of evidence with the GRADE system. Two independent authors screened studies for inclusion, extracted data and assessed methodological quality. Disagreements were resolved by the input of a third reviewer. We conducted random-effects meta-analyses for

short, intermediate and long-term follow-ups. We deemed an effect to be clinically important when the magnitude of the effect size was at least medium ($\geq 10\%$ of the scale). **Results:** Searches retrieved 3,644 records, and we included two trials (n=99 participants). One trial included patients with non-cancer pain and the one trial included patients with Rheumatoid Arthritis. Both trials were judged as low risk of bias. There was low quality evidence of no effect of smoking cessation on pain at the short (SMD -0.33, 95% CI -0.79 to 0.12, 2 studies) or intermediate (MD -0.27, 95% CI -2.06 to 1.52, 1 study) term. There was very low quality evidence of no effect on function at short term (MD -3.3, 95% CI -11.73 to 5.13, 1 study). For the secondary outcomes, there was very low quality evidence of no difference in smoking status at short term, but a significant reduction for the intervention group at intermediate term with low quality evidence. The mean number of cigarettes consumed per day was significantly lower in the intervention group at short term, but there was no difference at intermediate term with very low quality evidence. There was no difference between groups at short and intermediate follow-ups for depression and anxiety with low quality evidence.