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# Antioxidant therapy for pain reduction in patients with chronic pancreatitis: a systematic review and meta-analysis

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## Abstract

**Objectives:** Oxidative stress is strongly implicated in the pathogenesis of chronic pancreatitis (CP); however, clinical studies evaluating antioxidant therapy (AOT) in the management of CP pain have yielded conflicting results. The aim of this meta-analysis was to evaluate the efficacy of AOT in pain reduction in CP patients.

**Methods:** Two authors independently conducted a comprehensive literature search from inception to December 2013. Relative risk (RR) and 95% confidence intervals (CIs) were calculated using the Mantel-Haenszel and DerSimonian-Laird methods.

**Results:** Eight studies involving 446 patients (234 in AOT and 212 in control group) were included. Overall, CP patients who received AOT had significant reduction in pain compared with the control group (RR, 0.73; 95% CI, 0.58-0.91; P = 0.006). In the subgroup analysis, studies with predominantly alcoholic CP patients (RR, 0.60; 95% CI, 0.47-0.77; P < 0.0001) and studies with mean age of patients 42 years or older (RR, 0.66; 95% CI, 0.49-0.89; P = 0.006) showed significant benefit of AOT over placebo.

**Conclusions:** This is the first meta-analysis to summarize all the available evidence and show benefit of AOT in pain reduction in CP patients. There is a pressing need for well-designed larger studies with longer follow-up to better define the patient and disease factors favoring response, the optimal formulation, and duration of AOT.

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