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Efficacy of Antioxidants in Improving Painful Chronic Pancreatitis: A Systematic Review

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Context To date, there is no standard treatment for painful chronic pancreatitis (CP). Antioxidants (AO) have been proposed on the rationale that they may slow down the damage of the gland produced by oxidative stress, without convincing results. **Objective** Our aim was to systematically review the literature related to the efficacy of AO in painful CP. **Methods** This systematic review was conducted following PRISMA guidelines. All original reports in which humans with CP were treated with AO were considered for inclusion. Inclusion criteria also were: pain as endpoint and report of efficacy outcomes. No language restriction was set up. Studies presented only as abstracts, case reports, and case series with less than 10 patients were excluded. Literature search was performed with PubMed, SCOPUS, Web of Science, Cochrane Library. Last search was run on February 27th, 2013. MeSH terms and keywords used were: antiox*; vitamin supplement; antioxidant supplement; vitamin A supplement; vitamin B6 supplement; vitamin B12 supplement; folic acid supplement; vitamin C supplement; vitamin D supplement; vitamin E supplement; selenium supplement; beta-carotene supplement; lycopene supplement; isoflavone supplement; chronic pancreatitis. A quality appraisal of selected studies was made. **Results** Literature search retrieved 3,590 studies; nine met our inclusion criteria: 6 blinded randomized clinical trials (RCTs); 2 open trials; 1 prospective cohort study. Their comparability was limited because of differences in the endpoints (pain-free days, pain scores, QoL scores, supportive care needed); possibly severe selection bias and low statistical power due to small sample size were found in some studies. Few points of partial convergence include a potential reduction in the need of supportive therapies and inefficacy of AO in alcoholic pancreatitis. **Conclusion** Available evidence is inconclusive: confirmation or refusal of the efficacy of antioxidant therapies against pain in CP needs to be investigated by further RCTs, with adequate design and standardized outcome variables, so as to allow for comparison.