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[Intervention Review]

Pancreatic enzymes for chronic pancreatitis

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ABSTRACT

Background

The efficacy of pancreatic enzymes in reducing pain and improving steatorrhoea is debatable and the evidence base for their utility needs to be determined.

Objectives

To evaluate the efficacy of pancreatic enzymes in patients with chronic pancreatitis. The specific objectives were to compare the following: 1) pancreatic enzyme versus placebo; 2) different pancreatic enzyme preparations and 3) different dosage schedules of the enzyme preparations. We evaluated the following outcomes: change in frequency of abdominal pain, duration of pain episodes, intensity of pain, weight loss, steatorrhoea, faecal fat and quality of life.

Search methods

We devised a search strategy to detect all published and unpublished literature and the search included CENTRAL (*The Cochrane Library* 2009, issue 1), MEDLINE (1965 to February 2009) and EMBASE (1974 to Feburary 2009). We handsearched reference lists and published abstracts from conference proceedings to identify further relevant trials. The date of the last search was April 2009.

Selection criteria

Randomised controlled trials with or without blinding. We included abstracts or unpublished data if sufficient information was available.

Data collection and analysis

Two authors independently extracted and pooled the data pertinent to study outcomes. We combined continuous data using standardised mean difference (SMD) with 95% confidence interval (CI) and calculated the odds ratio (OR) for dichotomous data (95% CI).

Main results

Ten trials, involving 361 participants, satisfied the inclusion criteria. All the trials were randomised; two had a parallel design while the remainder had a cross-over design. Although some individual studies reported a beneficial effect of pancreatic enzyme over placebo in improving pain, incidence of steatorrhoea and analgesic consumption, the results of the studies could not be pooled for these outcomes. With the use of pancreatic enzymes, we observed a non-significant benefit for weight loss (kg) (SMD 0.06; 95% CI -0.23 to 0.34); a significant reduction in faecal fat (g/day) (SMD -1.03; 95% CI -1.60 to -0.46) and non-significant difference in subjects' Clinical Global Impression of Disease Symptom Scale (SMD -0.63; 95% CI -1.41 to 0.14). We found no significant benefit in reducing faecal fat with any particular schedule of enzyme preparation or type of enzyme.

Another small study did not show any significant benefit of timing the administration of enzyme preparations in relation to meals on faecal fat.

Authors' conclusions

The role of pancreatic enzymes for abdominal pain, weight loss, steatorrhoea, analgesic use and quality of life in patients with chronic pancreatitis remains equivocal. Good quality, adequately powered studies are much warranted.

PLAIN LANGUAGE SUMMARY

Pancreatic enzymes for chronic pancreatitis

Chronic pancreatitis is a condition afflicting nearly 0.04% to 5% of the population worldwide. The disease presents as recurrent episodes of abdominal pain, fatty stools and weight loss, or may be asymptomatic. Patients may develop complications over a variable period of time. Medical treatment often involves prescription of pancreatic enzyme preparations for these patients. This practice is based on studies which have shown the benefit of pancreatic enzymes on various outcomes such as abdominal pain, weight loss, analgesic use, fatty stools and quality of life. However, a collective conclusion about the role of pancreatic enzymes in chronic pancreatitis patients needs to be established from these studies. This systematic review aimed to collect all published and unpublished data on this subject in order to evaluate whether pancreatic enzymes have any benefit on various parameters in chronic pancreatitis, to compare different types of enzyme preparations and to evaluate whether different dosage schedules have any influence on the various outcomes. We included 10 studies in the review. These studies had enrolled small numbers of patients. Though individual studies showed benefit of varying degrees on the parameters mentioned above, we could not pool the results of these studies. With the evidence available so far, no definitive conclusion can be drawn for the benefit of pancreatic enzymes in patients with chronic pancreatitis.