Introduction

Although a variety of pancreas function tests are nowadays available to diagnose pancreatic exocrine insufficiency (PEI), this is a condition poorly known in Spain and its diagnosis often differs among medical centers across the country.

Objective

To systematically appraise the literature on the accuracy of four widely used tests to diagnose Pancreatic Exocrine Insufficiency (PEI) secondary to chronic pancreatitis (CP), gastrointestinal/pancreatic surgery or pancreatic cancer in Spain, namely: coefficient of fat absorption (CFA); mixed 13C-linoleic acid breath test (13C-MTG); fecal elastase-1 (FE-I); and serum nutritional markers (SNM).

Methods

Systematic review of the literature

A systematic review of the literature (until March, 2013) was performed in Medline/Pubmed, Cochrane Library, CRD, MEDION, ARIF, MEDES, IBECS, ISI WOK, SCOPUS. The search strategy was built according to Cochrane and NHS Centre for Reviews and Dissemination recommendations for reviewing diagnostic test accuracy studies and represented in Figure 1. Publications (original studies or reviews in English, Spanish, Italian, French or German) were included if they reported the accuracy of an index test for the diagnosis of PEI secondary to one of the selected patients conditions in adults. Expert validation of the search strategy was sought through a consensus meeting.

Results

Literature review

The literature search, including expert feedback on the search strategy, gave a total of 13,376 publications on the diagnostic accuracy of PEI tests were initially identified. Of these, 16 were selected. Additional publications were identified by handsearch (references from other publications) and reviewed (Figure 2).

Methods

Table 1. Published ranges of accuracy of the tests in CP and cancer/surgery patients (assessed vs. different reference standards and with different cutoffs)

<table>
<thead>
<tr>
<th>Index test</th>
<th>Chronic pancreatitis</th>
<th>Cancer/Surgery</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Sensitivity range (%)</td>
<td>Specificity range (%)</td>
</tr>
<tr>
<td>FE-I</td>
<td>48-93%</td>
<td>57-100%</td>
</tr>
<tr>
<td>13C-MTG</td>
<td>81%</td>
<td>85%</td>
</tr>
<tr>
<td>CFA</td>
<td>56%</td>
<td>40%</td>
</tr>
<tr>
<td>SNM</td>
<td>100%</td>
<td>55%</td>
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</tbody>
</table>

Conclusions

This is the first systematic review to confirm the accuracy of four diagnostic tests for PEI in CP and cancersurgery patients with the final selection of results being based on expert consensus to ensure that the data are representative of Spanish clinical practice. Cut-offs of these tests are crucial in determining their accuracy, for example at a cut of 100µg/g the sensitivity and specificity of FE-I is 91.8% and 94.8%, respectively [6]. These data, together with resource use and cost information from clinical practice will feed an economic tool to assess the cost of PEI diagnosis in Spain.

References