Secretin as a treatment for autism: a review of the evidence

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CRD summary
This review assessed the effectiveness of secretin as a treatment for autism. The authors appear to conclude that secretin is no better than placebo at providing symptomatic relief of autism. Although this conclusion reflects the evidence presented, the reliability of the review may be limited by its methodological weaknesses.

Authors' objectives
To assess the effectiveness of secretin as a treatment for autism.

Searching
PsycINFO and MEDLINE were searched from 1986 to 2002 using the reported search terms.

Study selection
Study designs of evaluations included in the review
There were no specific inclusion criteria for the study design. Most of the included studies were randomised controlled trials (RCTs), although there were also uncontrolled studies and case series. The duration of the studies ranged from 3 to 16 weeks.

Specific interventions included in the review
Studies of secretin were eligible for inclusion. The included studies used biologic or synthetic porcine secretin, synthetic human secretin, or a homeopathic secretin preparation. In most studies this was compared with placebo. Most studies used a single dose of secretin; others used multiple doses.

Participants included in the review
Studies of people with autism were eligible for inclusion. Most of the included studies were of children; only one study had adult participants. The participants all had diagnoses within the autism spectrum disorder. Some studies either specifically included or excluded participants with gastrointestinal (GI) disorder.

Outcomes assessed in the review
There were no specific inclusion criteria for the outcomes. The included studies reported a range of outcomes, including autistic and social behaviours, language and cognitive skills, which were evaluated using a variety of different tools and assessed by clinicians or caregivers.

How were decisions on the relevance of primary studies made?
The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative where each study was described individually.

How were differences between studies investigated?
Some differences between the studies were discussed in the text of the review.

Results of the review
The review included 17 studies, involving 639 participants in total. There were 13 RCTs, 5 of which had parallel groups (360 participants) and 8 of which had a crossover design (188 participants). In addition, there were 3 uncontrolled studies (88 participants) and 1 case series (3 participants).

Single dose of secretin (12 studies).

One case series with 3 children reported significant improvements in communication and social behaviour and GI functioning within 5 weeks. One uncontrolled study with 56 children found statistical improvements in several categories of an autism rating scale, but these were not classed as clinically significant. Nine placebo-controlled RCTs found no difference between secretin and placebo in effect on a range of outcomes including autism-related behaviours, communication behaviours, cognitive skills and medical condition. One RCT reported a marginally significant improvement in autistic behaviours with secretin compared with placebo after 3 weeks, but not at 6 weeks.

Multiple doses of secretin (3 studies).

Two RCTs involving children, one giving two doses of secretin or placebo 6 weeks apart and the other giving 6 doses of secretin or placebo over 4 weeks, both found no significant differences between the two groups in effects on autistic behaviours, language or cognitive functioning. One uncontrolled study of adults found no significant effect of homeopathic secretin given twice daily for 12 weeks.

Effects on children with GI problems (2 studies).

One RCT involving 19 children found significant effects of secretin, compared with placebo, on some autism behaviours only for the subgroup of participants with chronic diarrhoea. An uncontrolled study of 20 children with autism and GI symptoms found no significant effect of secretin on autistic and social behaviours.

Authors' conclusions
The authors appear to conclude that the evidence suggests secretin is no better than placebo at providing symptomatic relief of autism, and that attention should be turned towards proven treatments for autism instead.

CRD commentary
The review question was clear, although the inclusion criteria were poorly defined. The search for studies involved only two electronic databases, and no attempts appear to have been made to locate unpublished or non-English language papers, meaning that relevant studies might have been missed. Details of how the review process was carried out were not provided, so it was unclear whether steps were taken to minimise errors and bias. The quality of the included studies was not formally assessed, although some limitations in the design and methods of individual studies were discussed. Although the narrative synthesis of study results was limited, sufficient individual study details were provided to allow comparisons to be made. The authors' conclusions appear to reflect the evidence presented. However, the reliability of the review may be limited by its methodological weaknesses.

Implications of the review for practice and research
Practice: The authors stated that parents and caregivers should be directed towards proven treatments for autism (rather than secretin).

Research: The authors did not state any implications for further research.
Bibliographic details

PubMedID
15628608

Indexing Status
Subject indexing assigned by NLM

MeSH
Autistic Disorder /drug therapy; Child; Child Behavior /drug effects; Child, Preschool; Clinical Trials as Topic; Dose-Response Relationship, Drug; Gastrointestinal Agents /therapeutic use; Humans; Secretin /therapeutic use; United States

AccessionNumber
12005008429

Date bibliographic record published
30/06/2006

Date abstract record published
30/06/2006

Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.