Speech pathology interventions in patients with neuromuscular diseases: a systematic review

CRD summary
This review concluded that the published evidence for the effectiveness of speech pathology for adults with neuromuscular disease was very limited. Conclusions on the effectiveness of speech pathology interventions could not be drawn, given the lack of evidence, and the authors’ conclusion and recommendations for research seem appropriate.

Authors' objectives
To assess the effectiveness of speech pathology interventions for adults with neuromuscular diseases.

Searching
Five databases, including MEDLINE and The Cochrane Library, were searched in November 2007, for peer-reviewed publications in English, German, French or Dutch. Search terms were reported. Reference lists of reviews and articles were manually screened.

Study selection
Eligible for inclusion were studies other than single-case studies, assessing the effectiveness of regular speech pathology interventions for adults (>18 years old) with neuromuscular diseases. Speech pathology interventions could include information and advice (dietary modification, communication, and instructions for patients and relatives), or compensatory strategies (swallowing, strategies to improve intelligibility, or both). The outcomes of interest were dysarthria and dysphagia – swallowing at the level of body function; and intelligibility, communication, and eating and drinking at the level of activity and participation – according to the definitions of International Classification of Functioning, Disability and Health.

The patients in the included studies had similar medical diagnoses, but outcome measures differed across studies. No other details were provided.

Two reviewers independently screened studies for inclusion; discrepancies were resolved through discussion.

Assessment of study quality
Two reviewers independently assessed study quality and the quality of reporting, according to van Tulder criteria. Randomised controlled trials (RCTs) and controlled clinical trials (CCTs) were considered of sufficient quality if they met three of six reporting criteria, six of nine methodological criteria, and two of three statistical criteria. Other studies were considered sufficient if they met two of five reporting criteria, four of seven methodological criteria, and one of two statistical criteria.

Discrepancies between reviewers were resolved through discussion.

Data extraction
The authors did not state how the data were extracted.

Methods of synthesis
The results were presented in a narrative synthesis.

Results of the review
Four studies were included in the review. The methodological quality of one uncontrolled before-and-after study was considered sufficient, and the remaining three studies were insufficient.

The study that had sufficient methodological quality indicated, using objective measures, that slightly flexed head positions, not adapted to the ptosis (drooping of the upper eyelid), improved swallowing efficiency in patients with oculopharyngeal muscle dystrophy.
Authors' conclusions
The published evidence for the effectiveness of speech pathology for adults with neuromuscular disease was very limited.

CRD commentary
The review question and supporting inclusion criteria were clearly stated. Several sources were searched for relevant studies, but the search was limited by language and no attempts were made to identify unpublished data, so potentially relevant evidence may have been missed. Study quality was assessed, using appropriate criteria, and found to be limited. Study selection and quality assessment were performed by two people independently, thereby reducing the potential for reviewer error and bias. No details of the data extraction methods and processes were provided, which means that bias cannot be ruled out.

The study and patient characteristics were not reported in detail; the authors acknowledged that there was variation in outcome measures. The synthesis was limited to the one study of sufficient quality. It would have been helpful to have provided the results from the three other studies, even though they were of insufficient quality.

Conclusions on the effectiveness of speech pathology interventions could not be drawn, given the poor evidence. The authors' conclusion and recommendations for research seem appropriate.

Implications of the review for practice and research
Practice: The authors did not state any implications for practice.

Research: The authors stated that well-designed randomised controlled trials were needed to assess the effectiveness of standardised treatments for dysarthria and dysphagia, in patients with neuromuscular disease, with similar levels of impairment. The authors recommended videofluoroscopy or flexible endoscopic evaluation of swallowing. Other recommendations were made.

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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.