



NSW Speech Pathology Evidence Based Practice Interest Group

Critically Appraised Paper (CAP)

CLINICAL BOTTOM LINE: In this study, pulse oximetry was not found to be a reliable form of assessment for identifying episodes of aspiration in patients with neurogenic dysphagia, however the limitations of the study must be taken into account.

Clinical Question: In patients with neurogenic dysphagia is pulse oximetry a reliable assessment tool for identifying episodes of aspiration?

Search Terms: See CAT

Search Systems: See CAT

Citation: Sellars, C., Dunnet, C., Carter, R. (1998). A Preliminary comparison of videofluoroscopy of swallow and pulse oximetry in the identification of aspiration in dysphagic patients. *Dysphagia*, 13, 82-86.

Design: Comparative study with concurrent control.

Participants: 6 patients with neurogenic dysphagia, range of aetiologies, 2 months –30 years post onset. 5 controls, age range 25-44years. Not age matched.

Experimental Group: Baseline SpO₂ levels taken prior to videofluoroscopy underwent videofluoroscopy and received 2 liquid boluses, 1 paste and 1 water. SpO₂ and pulse rate taken continuously and 2 min post. Evidence of laryngeal penetration and aspiration noted.

Control Group: Baseline SpO₂ levels taken then received 2 juice boluses, 1 yoghurt, 1 biscuit and 1 water and did not undergo videofluoroscopy. Evidence of audible laryngeal penetration/ aspiration noted. SpO₂ and pulse rate taken continuously and 2 min post.

Results: No change in pulse rate found in relation to feeding. Nil significant effect on feeding found on SPO₂ in controls. Significantly depressed or volatile SpO₂ in experimental group. Nil direct relationship found between the occurrence of aspiration and SpO₂ level fluctuations.

Comments on Design: Heterogeneous population. Limited subject numbers. Nil selection criteria defined and different treatment methods applied to experimental and control groups

Level of Evidence (NH&MRC): 111 (2)

Appraised By: Adult Speech and Language EBP gP
Clinical Group:

Date: 13/09/04

Guidelines for completion of the CAP

Clinical Bottom Line

The consensus of the reviewers on implications of the paper on clinical practice. Whilst this may be somewhat subjective, it is hoped that robust discussion, the Level of Evidence and your comments on the design will enable you to produce a practical/realistic 'bottom line'. Many of the papers in Speech Pathology may have limitations, but the Clinical Bottom line should be aimed to help clinicians apply what evidence there is.

Clinical Question

This should ideally include four components:

- the patient or problem
- the intervention (or diagnostic test or prognostic factor)
- the comparison intervention or test (*optional*)
- the outcome

Design

Refer to pages 12 to 15 of the EBPIG Resource Package for guidance in reviewing the design used.

Comments on Design

Pages 12 to 15 of the Resource Manual should again assist here. You may also find it useful to refer to the forms 'Evaluating case studies/case series' and 'Critical appraisal sheet' adapted from Dr Lil Mikuletic's (see 'Critiquing/Appraising the Evidence').

Level of Evidence

It is recommended that the paper you are reviewing be rated against the NH&MRC Levels of Evidence, as reproduced here. The levels may be updated from time to time by the NH&MRC, but use of the ratings listed here will ensure consistency across CATs and groups. These levels are listed with comments on pages 15 and 16 of the Resource Package.

LEVEL

- I.** Evidence obtained from a systematic review of all relevant controlled trials
- II.** Evidence obtained from at least one properly designed randomised controlled trial
- III.**
 - 1** Evidence obtained from well-designed pseudo-randomised controlled trials (alternate allocation or some other method)
 - 2** Evidence obtained from comparative studies with concurrent controls and allocation not randomised (cohort studies), case-control studies, or interrupted time series with a control group
 - 3** Evidence obtained from comparative studies with historical control, two or more single-arm studies or interrupted time series without a parallel control group
- IV.** Evidence obtained from case series, either post-test or pre-test and post-test