NSW Speech Pathology
Evidence Based Practice Interest Group

Critically Appraised Topic (CAT)

CLINICAL BOTTOM LINE:
Pulse Oximetry is not a reliable assessment tool in identifying episodes of aspiration. Subjects with dysphagia tend to have lower Sp02 levels before, during and after swallowing, compared with subjects without dysphagia, however this is not significantly linked with episodes of aspiration.

Pulse Oximetry is useful when used in conjunction with bedside assessment to determine patients who may benefit from objective assessment of swallow (eg. Modified Barium Swallow or Fibreoptic Endoscopic Evaluation of the Swallow). This should be considered for patients who desaturate more than 3% on oral feeding.

Caution should be used when interpreting pulse oximetry readings for patients with chronic lung disease.

Background and Objectives:
The practicing Speech Pathology members of the Adult Swallowing EBP group wished to explore the evidence for the use of Pulse Oximetry, as an adjunct to the bedside clinical assessment of the swallow, in identifying episodes of aspiration (including silent aspiration).

Clinical Question [patient/problem, intervention, (comparison), outcome]:
In patients with neurogenic dysphagia, is pulse oximetry a reliable assessment tool in identifying episodes of aspiration?

Search Terms/Systems:
Search terms: Aspiration, Pulse Oximetry, Swallowing, Deglutition, Dysphagia, Sp02, oxygen saturation
Systems: CINAHL, Medline, Cochrane Library, Embase, CIAP links, Google, Psychinfo

Selection Criteria:
Adult populations, neurogenic dysphagia, use of pulse oximetry, use of objective assessment (FEES/MBS) to validate findings.

Results:
Evidence supporting this topic area is limited, with many of the reviewed studies achieving either Level IV or Level III (2) levels of evidence (NH&MRC). Most of the available research concludes that there is *no significant relationship between episodes of aspiration and Sp02 fluctuations*.

Most studies reported no significant variation in Sp02 among 'normal' subjects on swallow. There was frequent mention of reduced Sp02 levels in dysphagic patients, before, during and after the swallow, however this was not linked with the presence or absence of aspiration. There were frequent false negative (i.e. subjects aspirated but did not desaturate) and false positive findings (i.e. subjects did not aspirate but desaturated significantly) reported. False negatives also occurred in patients who were smokers or who had chronic lung disease.

Appraised By: Adult Swallowing EBP Group
Clinical Group: Adult Swallowing EBP Group

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