

Category :**Nutritional support**

A197 - A handheld device to detect co2 after insertion of nasogastric feeding tubes

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Introduction:

Erroneous nasogastric tube (NGT) placement and subsequent feeding can be fatal. Current techniques to identify NGT position focus on pH measurement of gastric aspirate. A device combining pH testing and CO₂ detection could reduce the need for chest radiographs (CXR), improve patient safety and save resources. Here we report first results of a handheld point of care device to demonstrate usability of CO₂ detection.

Methods:

NGTs were inserted in 30 patients in the Royal Liverpool University Hospital Intensive Care Unit. Data collection included: conventional pH measurement of aspirate (if obtained) and CO₂ detection using the

DoubleCHEK™ device (<https://enteralaccesstech.com>). NGT location on CXR was also recorded. Users were asked to complete an evaluation form containing device experience questions and allowed free-text comments.

Results:

Evaluation of the device was completed in 29/30 (96.67%) of cases. Aspirates were obtained in 14/30 (46.67%) cases with 7/14 (50%), resulting in a pH of <5.5 as measured by conventional pH strips. Of the 16/30 (53.33%) insertions yielding no aspirate, 3/16 (18.75%) were clinically located in the lungs. In these insertions, CO₂ was detected, the NGT was removed, and a second insertion attempt was successful as indicated by CXR or pH<5.5. Of the 7/30 (23.33%) cases in which aspirates were obtained, but pH reading was >5.5, six of seven (85.71%) CXRs showed that NGTs were in the stomach, and no CO₂ was detected with the DoubleCHEK™ device. Only 2/29 (6.8%) users would object to using the device in daily practice.

Conclusion:

Simultaneous pH and CO₂ detection is a promising method to avoid misplacement of NGTs. Difficulties in obtaining aspirates and high pH are common problems in NGT placement [1]. Further clinical trials are warranted to determine sensitivity and specificity of the technique compared to standard protocols and to evaluate the cost-saving potential.

References:

1. Pailsey et al. Ascertaining correct placement of nasogastric tubes. Crit Care 2017, Vol 21, P469