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ACCURACY OF THE CONEX AS A NEW METHOD TO ESTIMATE NASOGASTRIC TUBE INSERTION LENGTH TO IMPROVE PATIENT SAFETY: A PROSPECTIVE OBSERVATIONAL TRIAL

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Rationale: Misplacement of a nasogastric (NG) tube compromises safe administration of nutrients and increases the risk of pulmonary aspiration. Despite being commonly used, the nose-earlobe-xiphoid (NEX) distance is inadequate in predicting the required NG tube length^[1] and is even not evidence-based. A recently RCT^[2] demonstrated that in >20% of all patients NEX distance underestimated NG insertion length. Primary aim was to test an alternative approach, the 'correction of the NEX' (CoNEX) method, in predicting correct tip positioning: $(NEX * 0.38696) + 30.37 + 6\text{cm}$. Secondary aim was to investigate the likelihood to successfully obtain gastric aspirate.

Methods: A 7-month prospective trial was conducted in a Belgian general hospital. NG tubes were inserted/repositioned by a CNS according to a standardized protocol. Tip positioning was verified by 2 radiologists using chest X-ray. Adult patients needing a tube were included (N=218). Correct tip positioning was defined as >3cm under the lower esophageal sphincter (LES).

Results: Predicting the required NG tube length using the CoNEX method resulted in the tip of the NG tube situated >3cm under the LES in all patients. The depth of the tube tip in the stomach was not a determining factor for a possible upward loop of the tube inside the stomach. Within 2 hours after placement/reposition, it was possible to successfully obtain gastric aspirate in 77.9% of all tubes.

Conclusions: Of all known methods to determine an adequate NG tube insertion length, the CoNEX method seems to be the most accurate method for correct gastric tip positioning (>3cm under LES). Also, the success of obtaining gastric aspirate is at least equal to that of other methods.

References: ^[1]Taylor SJ, Allan K, McWilliam H, Toher D. The 'NEX' guideline is incorrect. *Br J Nurs* 2014;23:641–644.

^[2]Torsy T, Saman R, Boeykens K, Duysburgh I, Van Damme N, Beeckman D. Comparison of Two Methods for Estimating the Tip Position of a Nasogastric Feeding Tube: A Randomized Controlled Trial. *Nutr Clin Pract* 2018;33:843–850.

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