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INTER-OBSERVER AGREEMENT OF WATER AND SOLID SWALLOWS IN HIGH RESOLUTION MANOMETRY

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Introduction High Resolution Manometry (HRM) with presentation of pressure data as spatiotemporal plots highlights oesophageal landmarks and contractions that facilitates data analysis and interpretation. Normal values have been published for water swallows in the supine position. Studies in the upright position and with solid swallows reproduce more normal swallowing behaviour and increase test sensitivity for symptomatic dysmotility and dysfunction; however these 'physiologic challenge swallows' increase the complexity of pressure activity which may impair interinvestigator agreement. The aim of this study is to assess the interobserver agreement of water and solid swallows in the upright and supine positions for HRM.

Methods 12 healthy volunteers (Male:Female 5:7, age 28–56) underwent HRM using a 36 channel solid state assembly (Manoscan 360; Sierra Scientific Instruments) with sensors

spaced at 10 mm intervals from the pharynx to the stomach. After baseline measurements of the oesophago-gastric junction, assessment with 5×5 ml water and 3×1 cc bread swallows were assessed in the upright and supine position. Spatiotemporal plots of upright swallows were assessed by 3 investigators and supine swallows were analysed by 2 investigators. The intraclass correlation coefficient (ICC) was used to assess agreement for continuous variables corrected for chance. An ICC of <0.2 implies little, >0.5 good and >0.80 almost perfect agreement.

Results In the supine position ICC between two raters was >0.8 for all parameters for liquids and solids. In the upright position the ICC between three raters was significant and >0.5 for all parameters measured using liquid and solid swallows except for velocity (table 1).

Conclusion There is a high rate of agreement between observers for key HRM parameters during liquid and solid swallows. Interobserver agreement for velocity and, to a lesser extent, other parameters was lower in the upright than the supine positions likely due to reduced contractile pressures and coordination in the physiologic position.

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Keywords high resolution manometry, interobserver agreement.