Introduction

There are no established guidelines for the choice of reflux monitoring equipment. Neither are we any wiser of the accuracy and consistency of the reflux monitoring techniques. This study addresses the recording consistencies of the multi-channel pH-impedance (MII-pH) technique and the wireless Bravo pH (WB-pH) method.

Method

Patients who had 2 days of reflux monitoring using either MII-pH or WB-pH procedures in the year 2018 were selected. The consistency of normal and pathological reflux were compared between both days. The normal range considered for MII-pH was considered when total exposure was <4.3% and DeMeester <14.72. WB-pH monitoring was based on the following recording for day 1 and day 2 [1].

Inter-rater reliability (IRR) was employed to assess the correlation for days 1 and 2 for each method and fisher exact test was used to assess for statistical significance in consistencies between methods. Statistical significance using fisher exact was also employed to assess diagnostic yield by extending the MII-pH to day 2 and the necessity to have extended WB-pH monitoring. We also compared the technical failure of capturing data in each method.

Results

Total number of patients selected for this study was 459: MII-pH recording (F:M=58:33, aged 2–8 years) WB-pH recording (F:M=223:145, aged 2–0 years).

All patients who underwent the MII-pH method successfully completed the 48-hours recording, whereas, 24/368 (6.52%) of patients undertaking the WB-pH study encountered technical faults (capsule detachment sooner or significant artefacts captured) thus requiring to repeat the WB-pH study (p=0.0040).

IRR of the 2 days of reflux monitoring was significantly higher in patients who underwent MII-pH (89.0% vs 69.8%, p=0.0018). The diagnostic yield of GORD by extending MII-pH by the second 24-hr study increased by 5.5% whereas 45.6% of the patients who underwent WB-pH monitoring showed GORD on day 1 thus not requiring the extended reflux monitoring (p<0.0001). Only 9.0% of patients who undertook WB-pH demonstrated pathological reflux on day 2 when normal recording was observed on day 1.

Conclusion

MII-pH monitoring technique seems to offer stronger reliability of diagnosis between 2 consecutive days of recording and seems to be less prone to technical difficulties.

Reference