

Ambulatory reflux and combined pH- impedance monitoring

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Ambulatory reflux monitoring is considered one of the most important confirmatory tests for GORD. There are two types of monitoring devices: catheter based and wireless capsule (Figure 66.11). Both measure the pH value at 5–6 cm above the upper border of the LOS, as defined by manometry . For the catheter-based device, data are captured conventionally for 24 hours. The wireless capsule device is anchored onto the mucosa of the oesophagus by a pin and can transmit pH data for up to 96 hours. Various parameters are measured, such as the number of reflux episodes (when pH drops below 4) and oesophageal acid exposure time (the percentage of time exposed to pH < 4) (Figure 66.12). An oesophageal exposure time of more than 4% can be considered abnormal, and one more than 6% is considered diagnostic. A composite score (Johnson–DeMeester) consists of six parameters that can be calculated. The patient needs to record their symptoms throughout the study period, so that symptom correlation with pH data can be calculated. The catheter-based pH monitoring device also incorporates measurement of impedance. Impedance is inversely proportional to the electrical conductivity of the luminal contents and the cross-sectional area. Liquid refluxate has high conductivity and therefore low impedance. On the other hand, air has low conductivity and high impedance. With the change in the temporal-spatial patterns in different impedance sensors spreading across different levels of the monitoring catheter, a bolus transit can be assessed in its direction (antegrade or retrograde) as well as by its nature (air or liquid). Thus, acid reflux, aerophagia, belching and liquid passage can be distinguished (Figure 66.13).

18.0 Pharynx UOS 21.0 23.0 DCI 28.0 33.0 Oesophagus CDP 38.0 43.0 43.0 LOS PIP 44.4 44.3 OGJ 46.1 48.0 Stomach Gastric 52.3 53.0 0.0 150.0

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