

Intraobserver and interobserver reliability of visible light spectroscopy during upper gastrointestinal endoscopy.

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BACKGROUND:

Visible light spectroscopy (VLS) performed during upper gastrointestinal endoscopy allows measuring mucosal oxygen saturation levels to determine gastrointestinal ischemia. We aimed to determine the observer variability of VLS.

METHODS:

This is a single-center prospective study of 24 patients planned for usual care upper endoscopy. To test intraobserver variability, VLS measurements were performed in duplicate by a single endoscopist in 12 patients. For interobserver variability analysis, in another 12 patients VLS measurements were repeatedly and independently performed by two endoscopists in the same patient during the same endoscopy session. Observer variability was assessed with intraclass correlation coefficient (ICC) and clinical disagreement defined as >5% difference between first and second set of VLS measurements.

RESULTS:

The intraobserver reliability was excellent (ICC antrum 0.77, duodenal bulb 0.81 and duodenum 0.84) with clinical disagreement only in antrum (3% of all intraobserver measurements). The interobserver reliability was good for the duodenal bulb (ICC 0.70) without clinical disagreement; however, interobserver reliability was fair for duodenum (ICC 0.49) and antrum (ICC 0.56) with clinical disagreement occurring in 11% of all interobserver measurements.

CONCLUSIONS:

The observer reliability of VLS is fair to good with intraobserver reliability being better than interobserver reliability. This supports the use of VLS for detection of gastrointestinal ischemia.