

Detection of mesenteric ischemia by means of endoscopic visible light spectroscopy after luminal feeding.

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BACKGROUND AND AIMS:

Endoscopic visible light spectroscopy (VLS) enables measurement of mucosal oxygen saturation during upper GI endoscopy and is used in the diagnostic work-up of chronic mesenteric ischemia (CMI). Currently, VLS is performed when the patient has fasted. We aimed to determine whether food challenge improves the diagnostic performance of VLS measurements for the diagnosis of CMI.

METHODS:

This was a single-center prospective study of healthy controls and consecutive patients suspected of having CMI and referred to a Dutch specialized CMI center for standardized diagnostic CMI work-up. Immediately after conventional fasting, VLS measurements were taken, luminal feeding was administered, and VLS measurements were repeated 45 minutes later. Patients were classified as CMI if a multidisciplinary expert-based consensus diagnosis of CMI was established and successful revascularization therapy resulted in symptom relief. Patients were classified as no-CMI when consensus diagnosis was not reached or when symptom relief did not occur after technically successful treatment.

RESULTS:

We included 60 patients with suspected CMI and 16 healthy controls. Duodenal oxygen saturation was significantly higher postprandially compared with the fasting state: healthy controls: median (interquartile range) pre 54% (49%-56%), post 56% (53%-58%), $P = .02$, no-CMI patients (pre 55% (51%-57%), post 57% (53%-59%), $P > .01$); CMI patients: pre 51% (48%-53%), post 54% (50%-58%), $P = .01$. Mucosal oxygen saturation did not significantly increase postprandially in the duodenal bulb or antrum of the stomach. Absolute postprandial oxygen measurements and the absolute or relative difference between preprandial versus postprandial oxygen measurements did not provide additional discriminative ability for the diagnosis of CMI.

CONCLUSIONS:

Postprandial VLS measurements have no added benefit for the diagnosis of CMI.