

Reflectance spectrophotometry for the assessment of gastroduodenal mucosal perfusion.

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Reflectance spectrophotometry in assessing gastroduodenal mucosal perfusion was evaluated. Ischemia without congestion, e.g., during hemorrhagic hypotension or celiac artery occlusion, was associated with a reduction in the indexes of mucosal hemoglobin concentration and of oxygen saturation. Ischemia with congestion, e.g., during portal vein occlusion, or in absolute ethanol or suction-induced mucosal lesions, was associated with an increase in the index of mucosal hemoglobin concentration but a reduction in the index of oxygen saturation. An increase in the index of mucosal hemoglobin concentration associated with a normal index of oxygen saturation was found in the postischemic hyperemia after release of celiac artery occlusion and during the sustained increase in corpus mucosal blood flow induced by vagus nerve stimulation. Thus reflectance spectrophotometric measurements reflected ischemia, without or with congestion, and hyperemia. Additionally, although regional differences in reflectance spectrophotometric measurements were demonstrated in the duodenal, antral, and corpus mucosa, such differences bore no consistent relationship to regional differences in blood flow demonstrated in previous studies.

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