UPPER GASTROINTESTINAL TRACT

Bile acids may have a role in GERD and related neoplasia

The findings of a recent systematic review suggest that the reflux of bile acids might be linked to the pathogenesis of GERD symptoms, reflux esophagitis and Barrett esophagus neoplasia. Therapies targeted against bile acids might, therefore, have a role in the management of patients with GERD or Barrett esophagus.

Kenneth McQuaid and colleagues' analysis explored data in the medical literature pertaining to the role of bile acids in GERD and its related conditions. 83 articles that involved human or human esophageal tissue or cells and that assessed exposure to or manipulation of bile acids were included. Analysis of *in vivo* studies revealed that "bile acid concentrations were higher in the esophageal aspirates of patients with GERD than controls, and that bile acid infusions triggered GERD symptoms, especially at high concentrations or in combination with hydrochloric acid." Analysis of *ex vivo*

and *in vivo* data showed that "bile acids stimulated squamous esophageal cells and Barrett epithelial cells to produce inflammatory mediators and caused oxidative stress, DNA damage and apoptosis." These acids were also shown to induce "squamous esophageal cells to change their gene expression pattern to resemble intestinal-type cells and Barrett cells to increase expression of intestinal-type genes". The authors conclude that these data provide the foundation for clinical trials of the use of bile acid sequestrants in patients with GERD, but highlight that clinical recommendations cannot be made on the basis of these findings.

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Original article McQuaid, K. R. *et al.* Systematic review: the role of bile acids in the pathogenesis of gastro-oesophageal reflux disease and related neoplasia. *Aliment. Pharmacol. Ther.* doi:10.1111/j.1365-2036.2011/04709.x