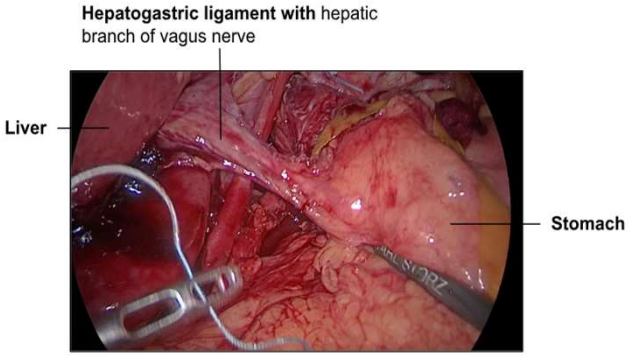
A Systematic Review and Meta-Analysis on the Impact of Preserving the Hepatic Branch of the Vagus Nerve in Upper Gastrointestinal Surgeries

Wang Jia Dong James[1], Ansari Ahamed Fahim Shaik[1], Tham Yong'an Matthew[1], Liu Yu Yin[23], Tay Kon Voi[134]

[1] Lee Kong Chian School of Medicine, Nanyang Technological University; Clinical Sciences Building, 11 Mandalay Road
[2] Chang Gung University College of Medicine, Taiwan
[3] Division of General Surgery, Department of Surgery, Kaohsiung Chang Gung Memorial Hospital
[4] Upper GI and Bariatric Division, General Surgery Department, Woodlands Health, Singapore

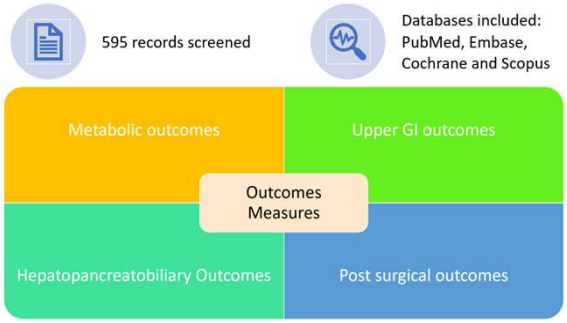
Introduction

Upper gastrointestinal surgeries encompass procedures on the esophagus, stomach, liver, pancreas, and gallbladder. In these surgeries, it is standard to dissect the hepatogastric ligament containing the hepatic branch of the vagus nerve, to access the surgical area.



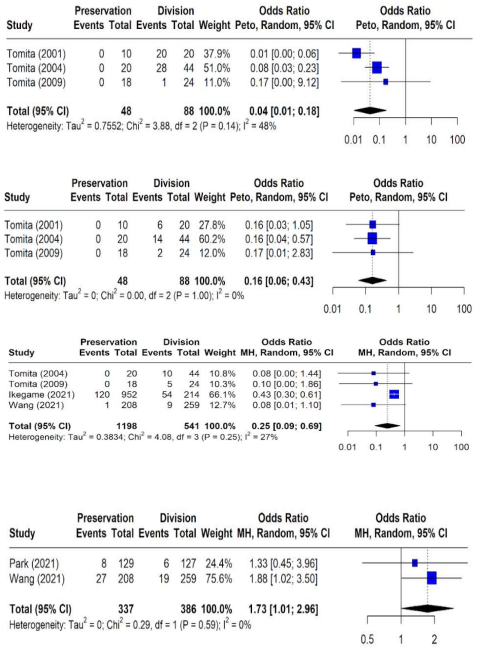
Yet, the hepatic branch, which innervates the liver and gallbladder, contributes to digestion, bile secretion, and glucose metabolism. Hence, recent surgical studies have explored the potential benefits of hepatic branch preservation in comparison to non-preservation. This systematic review and meta-analysis endeavors to compile and analyze the outcomes of these studies.

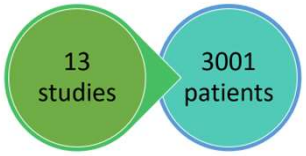
Material and Methods



Two independent reviewers evaluated abstracts and full-text reviews, extracted pertinent information, and conducted risk-of-bias assessments using the RoB 2 and Newcastle-Ottawa instruments.

Results





Hepatic branch preservation was linked to a decrease in appetite loss (OR 0.04, 95%CI 0.01-0.18), reflux symptoms (OR 0.16, 95%CI 0.06-0.43) and gallstone formation (OR 0.25,95%CI 0.09-0.69).

However, preservation was associated with an increased incidence of Clavien-Dindo Grade 2 complications (OR 1.73, 95%CI 1.01-2.96) in gastrectomies.

Conclusion and Discussion

Hepatic branch preservation is associated with favorable post-surgical metabolic outcomes, notably appetite preservation. This may be due to the hepatic branch's role in facilitating brain-liver crosstalk, thus, influencing homeostatic processes like appetite control and glucose metabolism.

Reduced gallstone incidence is likely due to preservation of gallbladder motility and function, achieved through retention of parasympathetic innervation.