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Efficacy and Safety of Submucosal Tunneling Endoscopic Resection for Submucosal Tumors Originating from Muscularis Propria at the Esophagogastric Junction: A Systematic Review and Meta-Analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 August 2023 and was last updated on 09 August 2023.

INTRODUCTION

Review question / Objective This study aims to evaluate the efficacy and safety of submucosal tunneling endoscopic resection (STER) for submucosal tumors (SMTs) arising from the muscularis propria (MP) in the esophagogastric junction (EGJ).

Condition being studied Submucosal tumors (SMTs) at the esophagogastric junction (EGJ) are defined as the submucosal tumors that are entirely or partially located within 1 cm proximal and 2 cm distal to the esophagogastric junction (squamous-columnar junction). SMTs are more common in leiomyoma and gastrointestinal stromal tumor (GIST). The latter has the risk of malignant potential, therefore, resection is recommended. STER is a new technique developed from peroral endoscopic myotomy (POEM), which has the advantages of less trauma, fewer complications and higher resection rates. Hence, this meta-analysis was performed by a comprehensive

literature search to pool the results of the STER procedures to assess its the safety and effectiveness of the treatment in SMTs at the esophagogastric junction.

METHODS

Search strategy ((esophagogastric junction OR gastroesophageal junction OR cardia) AND (submucosal tunneling resection techniques OR submucosal tunnel dissection OR submucosal tunneling endoscopic resection OR STER OR tunneling endoscopic muscularis dissection)).

Participant or population Patients with SMTs from the MP layer at the EGJ who received STER treatment.

Intervention Submucosal tunneling endoscopic resection.

Comparator None.

Study designs to be included Prospective and retrospective studies.

Author 4 - Xu Hongwei.

Eligibility criteria Studies have to meet the following inclusion criteria: (1) Studies including patients with SMTs from the MP layer at the EGJ who received STER treatment; (2) Clinical outcomes, such as complete resection rate or en bloc resection rate, complications, follow-up time, recurrence rate, and other data were reported. The exclusion criteria are as follows: (1) Publications in a language other than English; (2) Experimental studies in animal models; (3) Abstracts, reviews, comments, case reports, or conference abstracts.

Information sources PubMed, EMBASE, and Cochrane Library.

Main outcome(s) Complete resection rate and en bloc resection rate.

Additional outcome(s) Muscular injury, perforation, delayed bleeding, gas-related complication, Inflammation related complication.

Quality assessment / Risk of bias analysis Cochran's Q test.

Strategy of data synthesis We assessed heterogeneity with Cochran's Q test and the inconsistency index. Heterogeneity was considered significant if $p > 50\%$. If significant heterogeneity was detected, a random-effects analysis model was adopted; otherwise, a fixed-effects model was used. We also performed sensitivity analyses to investigate the heterogeneity. Statistical analyses were conducted using the statistical software Comprehensive Meta Analysis (version 3.3.070).

Subgroup analysis Subgroup analyses were conducted according to the tumor size.

Sensitivity analysis Sensitivity analysis is carried out by deleting each original article one at a time with the statistical software Comprehensive Meta Analysis.

Country(ies) involved China.

Keywords Submucosal tunneling endoscopic resection, Submucosal tumor, Esophagogastric junction, Metaanalysis.

Contributions of each author

Author 1 - Li Zhiwei.

Author 2 - Wang Maosheng.

Author 3 - Xiu Zhigang.