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Appendectomy and Risk of Parkinson's Disease: A Systematic Review and Meta-analysis

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202490039

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 9 September 2024 and was last updated on 9 September 2024.

INTRODUCTION

Review question / Objective To investigate the impact of appendectomy on the risk of Parkinson's disease onset.

Condition being studied Previous studies investigating the association between appendectomy and risk of Parkinson's Disease have yielded mixed results. This meta-analysis aims to reassess the association with newly available literature.

METHODS

Search strategy Literature search will be conducted in the electronic database PubMed and Embase. The search terms used will be (parkinson OR parkinsonian OR parkinsonism OR parkinson disease OR parkinson's disease OR paralysis agitans OR parkinsonian disorders OR

parkinsonian syndromes OR parkinsonian diseases) AND (appendectomy OR appendicetomy OR appendicitis OR appendix OR append*).

Participant or population Population with Parkinson's Disease and without Parkinson's Disease.

Intervention Appendectomy.

Comparator Population without appendectomy.

Study designs to be included Observational studies include case control studies, prospective cohort studies, and retrospective cohort studies.

Eligibility criteria

- Published in English
- High quality (NOS score ≥ 7)
- Included a matched control group
- Reported measurable outcomes.

Information sources Literature search will be conducted in the electronic database PubMed and Embase through September 10, 2024 to identify potential literature.

Main outcome(s) Risk of Parkinson's Disease.

Quality assessment / Risk of bias analysis The quality of the collected literature will be assessed using the Newcastle-Ottawa Scale (NOS). Studies with a score ≥ 7 were considered high quality studies. Two researchers will independently conduct the quality assessments. Disagreements will be deferred to a third reviewer for the final decision after discussion.

Strategy of data synthesis Statistic analyses of this study will be conducted using Review Manager 5.4. A random-effects model will be employed. Statistical significance is defined as a p-value ≤ 0.05 .

Subgroup analysis Subgroup analyses will be conducted, including different subgroups such as sex.

Sensitivity analysis Sensitivity analyses will be performed.

Language restriction English.

Country(ies) involved China & USA.

Keywords Appendectomy; Parkinson's Disease; Systematic review and meta-analysis.

Contributions of each author

Author 1 - Hok Leong Chin.

Author 2 - Yiu Sing Tsang.

Author 3 - Haojun Shi.