International Platform of Registered Systematic Review and Meta-analysis Protocols

review and meta-analysis

INPLASY

INPLASY202560085 doi: 10.37766/inplasy2025.6.0085 Received: 19 June 2025 Published: 19 June 2025

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Anemia among male tobacco smokers: A systematic

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ADMINISTRATIVE INFORMATION

Support - NIL.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202560085

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 June 2025 and was last updated on 19 June 2025.

INTRODUCTION

Review question / Objective Review question: What is the prevalence of anemia among adult male tobacco smokers? Objective: To determine the prevalence of anemia among adult male tobacco smokers.

Rationale There is an increasing burden of anemia among adult males globally. This is supplemented by increasing tobacco consumption among them. Tobacco smoking is known to cause iron deficiency, which might explain the increasing anemia among males. This systematic review and meta-analysis is designed to summarise the available data on anemia among adult male tobacco smokers.

Condition being studied Anemia.

METHODS

Participant or population 1. Adult male more than equal to 18 years old

2. Currently smoking tobacco by any method.

Intervention Not applicable.

Comparator Not applicable.

Study designs to be included Observational studies.

Eligibility criteria 1. Article published in full text; 2. Articles in the English language.

Information sources A systematic and comprehensive search will be conducted across the following databases: MEDLINE, Embase, and Scopus. The search engines like Google Scholar and PubMed will be thoroughly reviewed. Preprints and conference abstracts will also be reviewed for relevant articles. The search strategy will be based on the database/search engine used.

Main outcome(s) Prevalence of anemia.

Quality assessment / Risk of bias analysis Quality assessment/ Risk of bias analysis: Quality assessment will be done using the Critical Appraisal Skills Programme (CASP) checklist. Risk of bias will be assessed using Cochrane's ROBINS-E Tool.

Strategy of data synthesis The data extracted were entered into MS Excel Office 2019. The data was analysed using Review Manager 5.4.1 and STATA software (version 17, STATA Corp.). The outcome will be presented as a proportion with a 95% confidence interval (CI). Potential variability among the studies will be accounted for by a random effects model using the restricted maximum likelihood (REML) method. The pooled estimates will be represented using Forest plots. Heterogeneity will be measured and presented using I2 statistics and chi-square-based Q test. Publication bias will be assessed using Doi plots and the Luis Furuya-Kanamori (LFK) index.

Subgroup analysis Subgroup analysis will be performed to find out any urban-rural disparity.

Sensitivity analysis Sensitivity analysis will be performed using the leave-one-out technique.

Language restriction English.

Country(ies) involved India.

Keywords Anemia, Anaemia, Iow hemoglobin, hypochromia, Smoking, hookah, male, men.

Contributions of each author

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