

Preoperative Smoking Cessation Interventions: a Systematic Review and Meta-analysis

Background:

Smokers undergoing surgery have a higher risk of intraoperative and postoperative thoracic complications (1, 2). Current NICE guidelines recommend that smokers scheduled for elective surgery receive behavioral counseling and pharmacotherapy to quit smoking as soon as possible during outpatient or preoperative evaluations (3). Nevertheless, only 40% of smokers received smoking cessation interventions in a UK thoracic unit (4), and merely 30% of patients scheduled for thoracic cancer surgery achieved abstinence at the time of surgery (5).

Objective and Research Question:

The primary objective is to assess the efficacy of preoperative smoking cessation interventions.

Does preoperative smoking cessation assistance enhance continuous abstinence up to the last follow-up after surgery?

Methodology:

We searched five databases from inception to October 2023 using the PICO framework: adult current smokers scheduled for elective surgery (P) who were offered preoperative smoking cessation intervention (I) compared with standard care (C) to evaluate sustained cessation from preoperative quitting to the last follow-up (O).

Preliminary Results:

Initially, 2,368 studies were identified. Seventeen studies were included (N=3,849 participants), with fourteen reporting preoperative smoking cessation rates suitable for meta-analysis (Intervention group=1,298 vs. Control group=1,219). Preoperative smoking cessation interventions were about twice as effective compared to standard care (Risk ratio=1.99; 95% CI [1.15; 3.46]) (Figure 1). However, substantial heterogeneity was present among the studies ($I^2 = 76%$, $P < 0.01$), indicating variability in the outcomes.

Conclusion:

Preoperative smoking cessation interventions are more effective than standard care. These findings underscore the importance of preoperative smoking cessation support.

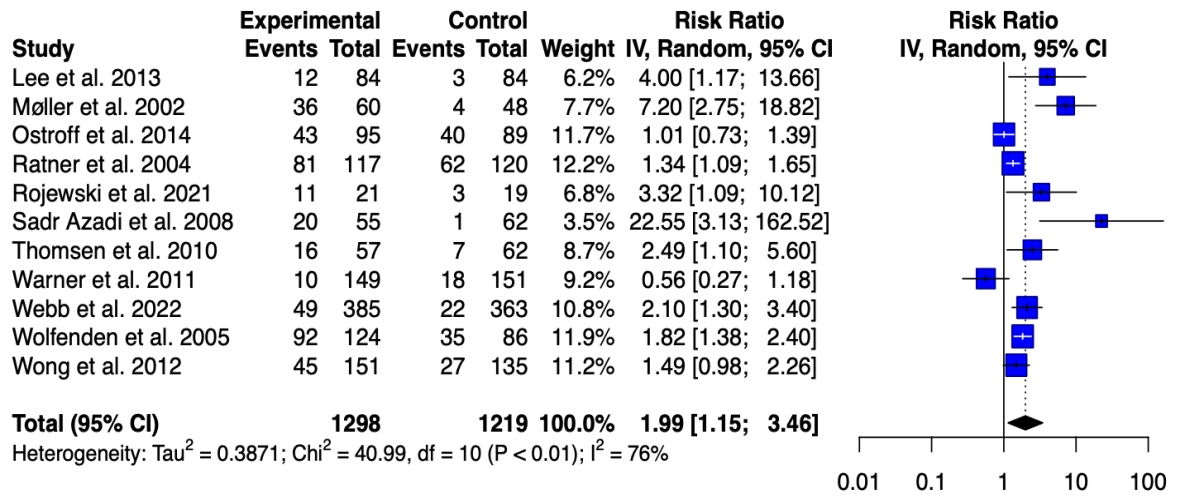


Figure 1: Forest plot for preoperative smoking cessation interventions compared to standard care.

References

1. Schwilk B, Bothner U, Schraac S, Georgieff M. Perioperative respiratory events in smokers and nonsmokers undergoing general anaesthesia. *Acta anaesthesiologica scandinavica*. 1997;41(3):348-55.
2. Lugg ST, Agostini PJ, Tikka T, Kerr A, Adams K, Bishay E, et al. Long-term impact of developing a postoperative pulmonary complication after lung surgery. *Thorax*. 2016;71(2):171-6.
3. National Institute for Health and Care Excellence. Tobacco: preventing uptake, promoting quitting and treating dependence London, UK2021 [cited 2023 September 12]. Available from: <https://www.nice.org.uk/guidance/ng209>.
4. Webb J, Kerr A, Thickett D, Naidu B. Smoking habits of pre-surgery patients. *Eur Respiratory Soc*; 2015.
5. Lugg ST, Tikka T, Agostini PJ, Kerr A, Adams K, Kalkat MS, et al. Smoking and timing of cessation on postoperative pulmonary complications after curative-intent lung cancer surgery. *Journal of cardiothoracic surgery*. 2017;12:1-8.