Short-term preoperative smoking cessation and postoperative complications: a systematic review and meta-analysis

Arrêt à court terme du tabagisme en préopératoire et complications postopératoires: revue systématique de la littérature et méta-analyse

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Abstract

Purpose The literature was reviewed to determine the risks or benefits of short-term (less than four weeks) smoking cessation on postoperative complications and to derive the minimum duration of preoperative abstinence from smoking required to reduce such complications in adult surgical patients.

Source We searched MEDLINE, EMBASE, Cochrane, and other relevant databases for cohort studies and randomized controlled trials that reported postoperative complications (i.e., respiratory, cardiovascular, wound-healing) and mortality in patients who quit smoking within six months of surgery. Using a random effects model, meta-analyses were conducted to compare the relative risks of complications in ex-smokers with varying intervals of smoking cessation vs the risks in current smokers.

Principal findings We included 25 studies. Compared with current smokers, the risk of respiratory complications was similar in smokers who quit less than two or two to four weeks before surgery (risk ratio [RR] 1.20; 95% confidence interval [CI] 0.96 to 1.50 vs RR 1.14; CI 0.90 to 1.45, respectively). Smokers who quit more than four and more than eight weeks before surgery had lower risks of respiratory complications than current smokers (RR 0.77; 95% CI 0.61 to 0.96 and RR 0.53; 95% CI 0.37 to 0.76, respectively). For wound-healing complications, the risk was less in smokers who quit more than three to four weeks before surgery than in current smokers (RR 0.69; 95% CI 0.56 to 0.84). Few studies reported cardiovascular complications and there were few deaths.

Conclusion At least four weeks of abstinence from smoking reduces respiratory complications, and abstinence of at least three to four weeks reduces wound-healing complications. Short-term (less than four weeks) smoking cessation does not appear to increase or reduce the risk of postoperative respiratory complications.