

RATE AND IMPACT OF THE INFECTION RISK RELATED TO REUSABLE FLEXIBLE BRONCHOSCOPES: SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS

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Introduction

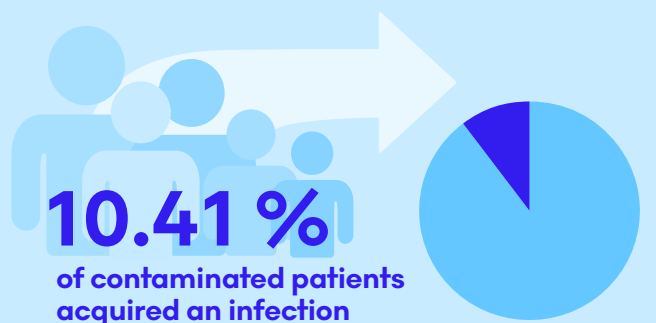
Contaminated reusable flexible bronchoscopes (RFBs) have been linked to multiple outbreaks and pseudo-outbreaks worldwide. The risk of a patient getting a hospital-acquired infection (HAI) after being contaminated by a bronchoscope has never been assessed via a random effect model.

Aim

We aimed to estimate the HAI risk after bronchoscope-vectorated patient contamination based on available published literature.

Conclusion

Based on available heterogeneous literature, we demonstrate that there is a 10.41% HAI risk after bronchoscope-vectorated patient contamination.

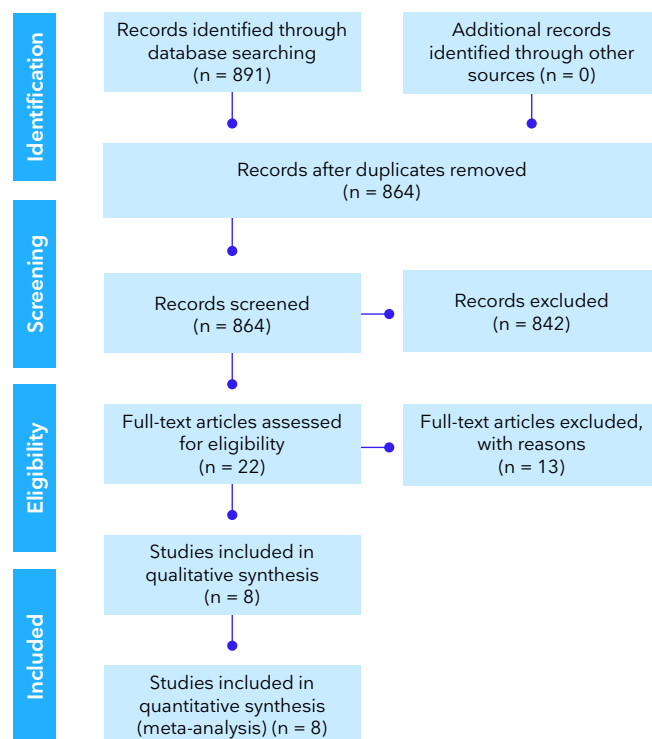


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Methods

We carried out a systematic literature search in the electronic databases PubMed and Embase from January 1, 2010 to April 28, 2021 to detect original studies investigating HAIs related to RFBs. Studies must state the number of patients contaminated by a bronchoscope and the number of patients developing a subsequent infection. The HAI risk from the included studies was analysed using the meta-package in RStudio V.3.6.3.

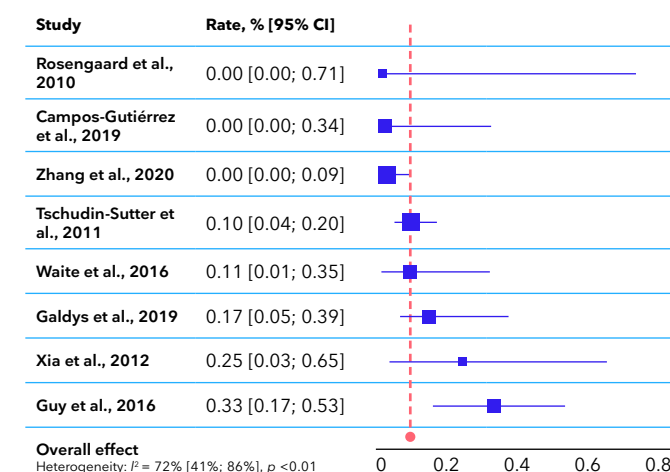
PRISMA diagram



Results

A total of 891 studies were detected in PubMed and Embase, of which eight were included for final analysis. We found a 10.41% (95% confidence interval: 2%-18%) HAI risk when the patients were contaminated by an RFB. The publication bias was not significant ($P=0.16$); however, there was significant heterogeneity between the included studies ($I^2=72\%$, $P<0.01$). Accordingly, 191 patients were contaminated via bronchoscopy, resulting in 24 cases of HAIs. Infections were caused by multidrug resistant (MDR) and non-resistant *P. aeruginosa*, MDR *A. baumannii*, *S. maltophilia* and carbapenem-resistant *K. pneumoniae*.

Egger's Regression test



Funnel plot

