

Title	Aerosol-Generating procedures and risk of transmission of acute respiratory infections: A systematic review
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Reference	CADTH Rapid Response Report, November 2011. ISSN: 1922-8147 (online). Available from: http://www.cadth.ca/media/pdf/M0023_Aerosol_Generating_Procedures_e.pdf

Aim

To assess the risk of transmission of acute respiratory infections to health care workers (HCWs) from patients undergoing aerosol-generating procedures.

Conclusions and results

Ten, non-randomized, very low-quality studies (five case-control and five retrospective cohort studies) comparing various health care workers (HCWs) exposed to patients receiving aerosol-generating procedures compared to HCWs caring for patients not undergoing such procedures were eligible for inclusion. All were studies evaluating transmission of severe acute respiratory syndrome (SARS) in hospital and intensive care settings during the outbreaks in 2002-2003. Findings suggest that some procedures potentially capable of generating aerosols were associated with increased risk of SARS transmission; tracheal intubation being the most consistent across studies. Other associations, which must be interpreted with caution due to the fact that the findings were from a limited number of studies, include non-invasive ventilation, manual ventilation before intubation and tracheotomy.

Methods

Studies evaluating the risk of disease transmission to health care workers exposed to aerosol-generating procedures were selected from common bibliographic databases, the websites of relevant agencies and associations, and other specialized databases. Searches were limited to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, and non-randomized studies from January 1990 to October 2010, with no restrictions on language. Quality of the evidence related to disease transmission from studies meeting predefined inclusion criteria, assessed by two independent researchers, was evaluated using GRADE. Where appropriate, data analyses were conducted using Review Manager.

Further research/reviews required

Studies of higher methodological quality are needed to provide more precise information about the risk of aerosol generation and the risk of transmission of microbes causing specific acute respiratory infections, including influenza, to health care workers from patients undergoing aerosol-generating procedures.

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Tran K, Cimon K, Severn M, Pessoa-Silva CL, Conly J. *Aerosol-Generating Procedures and Risk of Transmission of Acute Respiratory Infections: A Systematic Review* [Internet]. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2011