New tool will help identify patients at risk of adverse events, death: Ottawa COPD Risk Scale

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A new decision tool will help emergency physicians everywhere identify patients with chronic obstructive pulmonary disease (COPD) who are at risk of serious complications or death. The Ottawa COPD Risk Scale was published today in *CMAJ* (*Canadian Medical Association Journal*)

"We expect this risk scale, once fully validated, will be used widely in emergency departments to improve patient safety by identifying those who need to be admitted to hospital and those who could safely be sent home," says Dr. Ian Stiell, senior scientist at the Ottawa Hospital Research Institute and professor in Department of Emergency Medicine, University of Ottawa, Ottawa, Ontario. Dr. Stiell is world renowned for creating highly useful decision rules, such as the Ottawa Ankle Rules and Canadian C-Spine Rule.

Chronic obstructive pulmonary disease, usually caused by smoking, is a leading cause of hospital admission among seniors. In addition, more than one-third of people hospitalized for COPD end up at an emergency department within 30 days from discharge.

It can be challenging for emergency physicians to determine which patients with COPD should be admitted because, up until now, there has been little evidence to guide them about the risk factors for adverse events in patients with this condition. Adverse events include death within 30 days of visiting an emergency department, intubation or

ventilation, myocardial infarction and other serious events.

Researchers looked at data on 945 patients aged 50 years or older in six Canadian teaching hospitals in Ottawa, Toronto, Kingston (Ontario), Montréal, Quebec City (Quebec), and Edmonton (Alberta) to determine characteristics associated with short-term adverse events. After analysing 20 clinical and laboratory predictors of risk, they developed the Ottawa COPD Risk Scale, a 10-point scale that includes elements from a patient's history, examination or tests that can help emergency physicians determine the level of risk associated with discharging a patient.

The risk factors are easy to determine, do not need expensive testing and provide physicians with a quantitative estimate of risk for adverse events in patients with COPD.

"We found that the risk of a serious adverse event varied from 2.2%, for a score of 0, to 91.4%, for a total score of 10," write the authors.

The researchers also found that 62% of COPD patients were being sent home from emergency departments in Canada, compared to 20% in the United States. They suggest that this is partly due to bed shortages and the resulting pressures for physicians to be sure that admission to hospital is necessary.

"We are concerned by the number of serious adverse events among patients with COPD who were discharged from the emergency department," they write. "Identification of high-risk characteristics by physicians has the potential to substantially improve patient safety by helping to ensure that patients who are most at risk for poor outcomes are admitted."

They suggest the tool could also be used to identify patients who should have early follow-up for COPD after discharge from hospital.

"Once validated, this scale will ultimately benefit both patients and health care systems by ensuring appropriate admissions, targeting those who need early follow-up and diminishing unnecessary hospital admissions," they conclude.

More information: www.cmaj.ca/lookup/doi/10.1503/cmaj.130968

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