



Two-minute air test could replace chest x-rays, key scientific conference hears

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The study of 1156 abdominal surgery patients at five Australian and New Zealand hospitals in 2018 compared medical imaging results for patients after surgery with blood oxygen levels taken during a non-invasive bedside test.

The bedside test, which requires patients to breathe unassisted for two minutes while their blood oxygen levels are monitored through a finger "clamp" was found to be just as effective as an x-ray in diagnosing serious chest infections such as pneumonia or lung disease. Patients' blood oxygen levels were monitored while they breathed normally without oxygen therapy for two minutes. The patients were then placed back on their oxygen therapy and the test repeated daily for fourteen days.

Nearly one in five of the patients developed a chest infection after surgery. Of these patients, 76 per cent had signs of a chest infection on x-ray and 81 per cent had low oxygen levels detected with the air test.

Launceston General Hospital physiotherapist Ms Ianthe Boden presented her findings at the Australian and New Zealand College of Anaesthetists' Annual Scientific Meeting in Kuala Lumpur on Thursday May 2.

"Compared to medical imaging, the air test is a simple, low cost, non-invasive bedside test that delivers an immediate result with no radiation exposure risk for the patient. Unnecessary diagnostic imaging may be avoided by using the air test rather than a chest x-ray to exclude a pulmonary complication," she said.

"The air test is sensitive in being able to detect very early signs of a respiratory complication and chest infections. It's cheap and simple. It alerts medical staff that someone should be investigated further."

In a separate presentation at the meeting Ms Boden also revealed how the potentially deadly risk of pneumonia after abdominal surgery could be halved if hospitals provided simple breathing exercises and physical activity for patients.

Ms Boden said pneumonia was not taken as seriously in hospitals as heart attacks or blood clots.

"Hospitals worldwide have routine mandatory treatments for blood clots such as medication to thin the blood.

Hospitals spend billions to prevent pulmonary embolisms (clots) and heart attacks but a chest infection is actually 10 times more common than that and just as deadly. A chest infection such as pneumonia is just not related to the chest. It can set off a cascade of very negative events in the body which then sets you up for other medical conditions if you are susceptible," she explained.

“Something about getting pneumonia sets up a situation where the body is vulnerable to other problems such as heart attacks, strokes or responding to chemotherapy.”

Ms Boden is the lead researcher for the three year CHESTY trial of 35 hospitals worldwide, including Australia and New Zealand, which is examining rates of respiratory complications after major surgery. The study is funded by the ANZCA Clinical Trials Network.

More than 1900 anaesthetists, pain specialists and other medical practitioners have gathered for the ANZCA meeting *New worlds come explore* at the Kuala Lumpur International Convention Centre. The meeting features dozens of significant research papers, workshops and presentations on clinical and scientific advances.