

New test spots more lung clots but seems to result in overdiagnosis

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A new diagnostic test to detect pulmonary embolism (a blockage of the main artery of the lung) misses fewer clots, but seems to result in overdiagnosis, warn experts in *BMJ* today.

The introduction of CT pulmonary angiography has been associated with an 80% rise in the detection of [pulmonary emboli](#) in the US, but with little change in [death rates](#).

Professor Renda Soylemez Wiener and colleagues argue this is evidence of overdiagnosis. They say some patients are helped, but many are harmed by the [adverse effects](#) of unnecessary treatment.

This article is the first of a series looking at the risks and harms of overdiagnosis in a range of common conditions. The series, together with the Preventing Overdiagnosis conference in September, are part of the *BMJ*'s Too Much Medicine campaign to help tackle the threat to health and the waste of money caused by unnecessary care.

Pulmonary embolism has been described as one of the most commonly missed deadly diagnoses. Until recently, ventilation-perfusion (VQ) scanning was the first line test, but a new technology introduced in 1998 – CT pulmonary angiography – offered higher resolution and more definitive results.

Using national US data, the authors show an 80% rise in incidence of [pulmonary embolism](#) in the eight years after CT pulmonary angiography

was introduced (from 6.2 per 100,000 to 112.3 per 100,000 US adults).

Despite this, deaths from pulmonary embolism in the US population changed little (from 12.3 to 11.9 per 100,000), while in-hospital deaths decreased by a third (from 12.1% to 7.8%), suggesting that the extra emboli being detected are less lethal.

Data also show a substantial increase in complications from anti-clotting treatment, as well as fear and anxiety for patients following diagnosis and treatment.

The authors stress that inferring overdiagnosis by observing [population trends](#) "has limitations" but say "its strength lies in its representativeness of the population and reflection of actual clinical practice."

Addressing the problem of overdiagnosis is challenging, and the answer is not simply to do less testing, they write. Instead, they suggest clinicians test (and subsequently treat) more selectively and consider alternative tests such as VQ scanning and ultrasound when appropriate.

"Pulmonary embolism is unquestionably an important cause of death, and rapid diagnosis and treatment can be life saving," they write. But the diagnostic zeal and technological advances meant to improve outcomes of patients with pulmonary embolism are double edged swords: some patients are helped, but many are harmed through overdiagnosis and overtreatment."

They conclude: "To improve outcomes for all patients, we need to learn more about which small emboli need treatment."

In an accompanying editorial, *BMJ* editors and others involved in the drive to prevent overdiagnosis say there is an urgent need to do better at identifying and spurring debate on the growth in unhelpful diagnosis and

unnecessary treatment.

They believe we should be careful not to label risk factors as diseases and get better at sharing uncertainty with [patients](#) about disease definitions, the risks and benefits of testing, and the consequences of different treatment options.

They conclude: As countries struggle with rising health care costs, the economic downturn, and the challenge of providing equitable care for all, it's time to find ways to safely and fairly wind back the harms of too much medicine.

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