

New risk test for sepsis for heart patients

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Nearly one in four deaths in people with heart failure are caused by sepsis, according to new research.

Now scientists from the University of Leeds, who are funded by the British Heart Foundation, have developed a 'risk profile' to identify [patients](#) who are most at risk, often years before they become ill.

The researchers hope the tool will help doctors determine which patients may benefit from closer monitoring and help to ensure they receive rapid treatment when they fall ill.

Sepsis is a very serious complication of an infection. Without treatment it can lead to multiple organ failure and [death](#). Catching cases early could save thousands of lives every year.

Professor Richard Cubbon, senior author of the study from the University of Leeds, said: "We have created a simple way to identify people with heart failure who are at greatest risk of dying from sepsis.

"It could be part of a routine check which is already performed when they visit their doctors.

"With our risk profile, we hope people at high risk of sepsis will receive better monitoring, and infections which could lead to sepsis are treated early."

Heart failure occurs when the heart is not pumping blood around the body as well as it should, most commonly when the heart muscle has been damaged – for example, after a heart attack.

The debilitating condition affects over 920,000 people in the UK and causes breathlessness, fatigue and premature death. People who have heart failure are also more vulnerable to potentially deadly infections.

Researchers from the University tracked 1,802 patients with [chronic heart failure](#) from 2006 to 2014 for an average of four years. The scientists collected information about each patient at the beginning of the study. During the study, which has been published today in the *Journal of the American Heart Association*, 737 patients died, with 173 (23.5%) deaths caused by sepsis.

The team analysed this data and found several distinct markers which flagged higher risk of death from sepsis specifically, rather than progressively worsening heart failure or sudden cardiac arrest.

Blood samples from high-risk patients contained lower levels of vitamin D and higher counts of platelets—cells which help blood clot.

Those at high risk were also older, more likely to have chronic lung disease (chronic obstructive pulmonary disease) and more likely to be male.

The researchers used this data to create the 'risk profile' which could be used in future to flag patients at highest risk of dying from sepsis.

These patients could receive counselling, closer monitoring by their GP and vaccines to prevent respiratory infections – the root cause of 70% of sepsis cases in the study.

Sepsis, sometimes called blood poisoning, occurs when the immune system goes into overdrive in response to an [infection](#) and starts attacking the body's own cells, causing damage to vital organs.

It can take hold quickly and, without rapid treatment, can lead to multiple organ failure and death.

Professor Jeremy Pearson, Associate Medical Director at the British Heart Foundation, said: "To most people, a person with [heart failure](#) dying from sepsis would seem like a tragic and unpredictable accident – but the shocking reality is that sepsis is the cause of death in a quarter of these people.

"This research should act as a wake-up call. Sepsis is a silent killer and it's even more deadly in people who have [heart failure](#).

"We need to spot these people and treat them before it's too late. This new test could give us the upper-hand in preventing the infections which cause [sepsis](#) and prevent the tragic and unnecessary loss of life."

More information: Andrew M. N. Walker et al. Prevalence and Predictors of Sepsis Death in Patients With Chronic Heart Failure and Reduced Left Ventricular Ejection Fraction, *Journal of the American Heart Association* (2018). [DOI: 10.1161/JAHA.118.009684](#)

Provided by University of Leeds

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