A fighting chance of survival—life-saving stents for heart attacks

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A study of 300,000 heart attack patients, led by the University of Leeds, has found rapid rates in the uptake of a treatment which improves a patient's chances of survival after a major heart attack.

The research, part-funded by the British Heart Foundation and the National Institute of Health Research, showed the uptake of heart attack treatment gives nine in ten patients fighting chance of survival.

The use of emergency stenting treatment (PPCI) increased from 0.1% in 2003 to 86% in 2013 for patients with STEMI - a heart attack caused by

a complete blockage of a coronary artery which accounts for 25-40% of all heart attack cases in Europe.

Despite such rapid uptake, the study found vast differences in the provision of PPCI treatment between hospitals, ranging from a 4-300% increase from 2003 to 2013. Recipients of the procedure are 37% less likely to die compared to those treated with clot-busting drugs.

PPCI involves opening a blocked artery to restore blood flow to the oxygen-starved part of the heart and has helped save thousands of lives since becoming available in the early 2000's.

Introduction of PPCI followed a ten-year action plan for heart disease (National Service Framework for Coronary Heart Disease) which prompted system-wide change and led to an increase in the number of hospitals able to deliver this lifesaving treatment.

However the research, published in the journal Heart, also found vast differences in the provision of PPCI treatment between hospitals, ranging from a 4 - 300% increase over the ten years.

Patients suffering from diabetes, angina or having previously had a heart attack were less likely to receive the treatment (3%, 4% and 5% respectively), with chronic illness increasing the difficultly of diagnosis.

Living more than 30 kilometres from a hospital also lead to lower PPCI rates, but guidelines state that patients whose treatment with PPCI cannot be provided within two hours of arrival of the emergency services should receive clot busting drugs as an alternative.

Other factors including the number of suitably trained cardiologists and an absence of round the clock availability of PPCI helped to explain 50% of the variation between hospitals.

However, the researchers say the remaining variation indicates differing standards of care across England and they believe all heart attack centres should have the facilities and infrastructure to be able to deliver this routine treatment round the clock.

Dr Chris Gale, BHF-funded researcher of the School of Medicine at the University of Leeds, said: "Emergency stenting has revolutionised the way we now treat heart attack patients and our research highlighted just how far we have come over the past ten years, with the vast majority of patients now receiving the best care.

"However it's clear that opportunities are being missed and in some cases treatment is simply not being offered. This is unacceptable and undoubtedly lives are being lost as a result.

"We need to ensure that services are adapted so doctors are able to recognise patients who need this potentially life saving treatment and hospitals are geared up to deliver it."

Professor Peter Weissberg, Medical Director of the BHF, said: "BHF-funded researchers first showed that a heart attack is caused by a blood clot blocking a coronary artery and that the sooner the blockage is opened, the greater the chances of survival.

"It is a testament to the NHS and its investment through the National Service Framework for Coronary Heart Disease that today nine in ten people who suffer a major heart attack in the UK are treated by PPCI. But clearly we need to do even better to guarantee all patients across the UK receive the best possible treatment.

"We need to ensure that the NHS provides enough, sufficiently resourced heart attack centres providing round the clock PPCI, to avoid needless loss of life."

More information: Patient and hospital determinants of primary percutaneous coronary intervention in England, 2003–2013. *Heart*. Published Online First: 5 January 2016 DOI: 10.1136/heartjnl-2015-308616