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Stem cell surgery could repair damage left by heart attack  
[DAILY MAIL]

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HEART attack victims are to be injected with their own stem cells in the hope of repairing the damage, it emerged yesterday.

British doctors believe the technique, a world first, could prevent patients suffering a second attack or developing potentially deadly heart failure.

It involves stem cells being taken from a patient's bone marrow and injected directly into damaged heart muscle.

A three-year trial of the procedure will start in Bristol in August.

'If this works, then it will be a new treatment that could be used for many, many patients,' said Dr Raimondo Ascione, who is leading the study at Bristol University.

'Around one in five heart attack victims will go on to develop heart failure. A number of these will die within two or three years and those remaining will have a very poor quality of life.

'If this trial is successful it could allow heart attack patients to have a good quality of life.' A heart attack takes place when a vessel feeding blood to the heart is blocked, starving the organ of oxygen. During the attack, heart cells die, leaving areas of scarred tissue which are less effective at pumping blood.

If the tissue is badly damaged, heart attack victims go on to develop heart failure, a condition that can leave them breathless and immobile.

Doctors can improve the flow of blood around the heart with an angioplasty - the reopening of a blocked artery - or a coronary bypass.

But while these techniques can dramatically improve quality of life, they cannot restore a damaged heart.

Britain has one of the worst heart attack rates in the world, with the NHS spending GBP1.7 billion a year on treatment. The researchers are to test the technique on 60 patients recovering from heart attacks.

They will be injected with their bone marrow stem cells in a routine coronary bypass operation between ten days and three months after their attack.

Stem cells are the body's 'parent cells', capable of turning into different types of tissue.

Under the right conditions, stem cells from bone marrow will turn into healthy heart tissue.

Six months later, a MRI scan will reveal if the stem cells have restored the heart.

The trial is a world first because of the type of bone marrow stem cells chosen, the fact that they are injected directly into the heart and because some of the patients will be given a harmless, but useless placebo injection rather than a dose of stem cells. This should allow doctors to prove whether the treatment is effective.

Dr Ascione said: 'Current treatments aim to keep the patient alive with a heart that is working less efficiently than before the heart attack.

'Cardiac stem cell therapy aims to repair the damaged heart as it has the potential to replace the damaged tissue.' The timing of the injections is crucial, he believes. If stem cells are given too soon, the heart's natural healing process will not have started properly. Given too late, scar tissue could already have formed in the heart.

Last year, trials of a similar stem cell technique began at the London Chest Hospital and London Heart Hospital.

But in that trial, patients were injected with the cells within a few hours of their heart attack.

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