PARAMEDIC

Pre-hospital Randomised Assessment of a Mechanical Compression Device

Information Sheet for Trial Participants

BACKGROUND

Each year around 30,000 people in the United Kingdom suffer out of hospital cardiac arrests and less than one in ten of those return home alive.

Early high quality Cardio- Pulmonary Resuscitation (CPR) is critical to survival. However maintaining high quality chest compressions during resuscitation is difficult for crews of emergency vehicles due to crew numbers, fatigue etc and it is particularly difficult in moving vehicles.

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A number of mechanical devices, suitable for use outside a hospital have been developed over the years to improve the quality of chest compressions and therefore attempt to improve patient outcomes.

However purchasing sufficient devices to go on all NHS front line ambulances would cost in the region of £40-50 million pounds, plus additional annual maintenance and training costs of several million.

Before the NHS invested millions of pounds in mechanical CPR devices the Joint Royal College Ambulance Liaison Committee and Resuscitation Council (UK) called for research to work out if mechanical chest compression devices were better than the manual CPR provided by trained NHS paramedics.

The University of Warwick Clinical Trials Unit initiated the Pre Hospital Randomised Assessment of a Mechanical Compression Device in Cardiac Arrest Trial (PARAMEDIC-1) in partnership with Coventry and Surrey Universities, West Midlands, North East, South Central and the Welsh NHS Ambulance Services. The PARAMEDIC-1 trial evaluated the LUCAS-2 mechanical chest compression device.

WHAT WE DID

The trial took place acros four Ambulance Services wh serve a population of 1 million people over 24,00 square miles. Emergenc vehicles (rapid response an standard ambulances) fror 91 ambulance stations were allocated to carry a LUCAS-2 device or to continue with current standard treatment (manual ches compressions). If the first ambulance to arrive had a LUCAS-2 device the crew were able to use it. If the first ambulance did not contain a LUCAS-2 device then standard manual CPR was provided by the highly trained NHS Paramedics.

The primary purpose of the trial was to see if more people would be saved by using the mechanical chest compressions (LUCAS-2) compared to ambulance paramedics performing standard manual chest compressions using their hands.

Between April 2010 and June 2013 a total of 418 emergency vehicles were involved in the trial of which 287 were double manned ambulances and 131 single manned rapid response vehicles.

The emergency vehicles involved in the trial attended 11,171 potential cardiac arrest patients and the proportion of cases where resuscitation was attempted was 41% and this was similar in both groups.

A total of 4471 patients were enrolled in the study of which 1652 were in the group where emergency vehicles carried the LUCAS-2 device.

A total of 985 patients were treated with the device. Patients who were known, or believed to be under 18 years of age, those known or apparently pregnant and cases where the cardiac arrest was the result of trauma were not eligible for the trial and received standard treatment.

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WHAT WE FOUND

The main result of the study was that there was no significant difference found between the control and experimental groups.

The study provides reassurance that the high quality treatments delivered by NHS Ambulance Paramedics cannot be beaten by a machine.

The study helps remind us of the importance of focusing on simple treatments that are proven to save lives – those being someone starting CPR prior to the ambulance arriving, early de fibrillation and a rapid response by the ambulance service.

THANK YOU

The study team are very grateful for the help and co-operation from the study participants, their familes and friends, and the Ambulance staff who worked so hard to make the study a success.

Further information about the trial can be found at: www2.warwick.ac.uk/paramedic

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