Cognitive problems are common after cardiac arrest

April 17 2015

Half of all patients who survive a cardiac arrest experience problems with cognitive functions such as memory and attention. This has been shown by a major international study led from Lund University. Surprisingly, however, a control group comprising heart attack patients had largely the same level of problems. This suggests that it is not only the cardiac arrest and the consequent lack of oxygen to the brain that is the cause of the patients' difficulties.

The study led by Lund University involved 950 cardiac arrest patients in Europe and Australia. Six months after the cardiac arrest, half of the patients had died, and the survivors were followed up with cognitive screening tests. Both the patients and their relatives were also asked to report changes that had taken place following the cardiac arrest.

Almost 300 cardiac arrest survivors also underwent more detailed tests. Their results were compared with a control group made up of heart attack patients.

"We thought there would be a clear difference between the groups, because the heart attack patients had not been exposed to any oxygen deficiency in the brain. However, they had signs of mild brain damage to almost the same extent as the cardiac arrest patients", says Dr Tobias Cronberg, Associate Professor at Lund University and consultant neurologist at Skåne University Hospital in Lund.

The researchers therefore believe that the cognitive problems can be

explained to a high degree by the risk factors that are common to patients with different types of heart complaint, for example diabetes, high blood pressure and high cholesterol. Other studies have already shown that these factors increase the risk of dementia.

"Our conclusion is that if we are to provide good treatment to cardiac arrest patients, we don't just need to save their lives; we also need to ensure that they tackle these risk factors, for example through improved diet and more exercise. Otherwise they are at risk of developing dementia", says Tobias Cronberg.

Dr Cronberg believes it would be good if all cardiac arrest patients received follow-up not just with regard to physical health, but also with regard to memory and attention. Both patients and their relatives have appreciated the opportunity to discuss any deterioration, its causes and how it can be addressed.

However, the international study showed that the quality of life of most cardiac arrest survivors was generally in line with that of the rest of the population. According to Tobias Cronberg, survival in itself probably plays an important part in this: the patients know that they have come close to dying and are grateful to still be alive.

The main aim of the study was to compare the effect of a body temperature of 33°C and 36°C following cardiac arrest. The researchers have previously shown that maintaining a temperature of 36°C produced the same survival rate as cooling to 33°C.

"We have now also demonstrated that not only survival but also cognitive ability is the same in patients who have been kept at 33°C or 36°C. This is very important for the reliability of the results we have previously presented", said Tobias Cronberg.

The research group's results have been published in two distinguished journals, *Circulation* and *JAMA Neurology*.

Provided by Lund University