

Heart attack patients return to work later and retire earlier if treatment is delayed

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System delay in treating patients with ST-elevation myocardial infarction (STEMI) postpones their return to work and increases early retirement, according to research presented at the Acute Cardiac Care Congress 2013 by Kristina Laut, PhD student from Aarhus, Denmark.

The Acute Cardiac Care Congress 2013 is the annual meeting of the Acute Cardiovascular Care Association (ACCA) of the European Society of Cardiology (ESC) and is held 12-14 October in Madrid, Spain.

Ms Laut said: "System [delay](#), which is time from [emergency medical service](#) call to reperfusion with [primary angioplasty](#), has been associated with increased mortality and heart failure after STEMI. The 2012 ESC STEMI guidelines¹ highlight system delay as a performance measure of quality of care."

She added: "Approximately 45% of [patients](#) admitted with STEMI are of working age but until now it was not known whether system delay impacts on timing of return to work and retirement. We decided to investigate this association because of the heavy burden to society with loss of production."

The study investigated whether system delay was associated with the duration of absence from work or time to retirement in STEMI patients treated with primary percutaneous coronary intervention (PPCI).

This population-based cohort study included 4,061 patients under 67 years of age admitted with STEMI between 1 January 1999 and 1 December 2011 and treated with PPCI. The Danish National Register on Public Transfer Payments provided data on work outcomes. Only patients who were full- or part-time employed three weeks before their STEMI admission were included. Cut-off points of 4 and 8 years were used to ensure there were 10% of patients remaining for each of the analyses.

After 4 years of follow up, 91% of the study population had returned to work. After 8 years of follow up, 29% had retired. After adjusting for confounding factors, system delay greater than 120 minutes was associated with postponed return to work (Sub Hazard Ratio=0.86; 95% Confidence Interval [CI]=0.81-0.92) and earlier retirement from work (Hazard Ratio=1.21; 95% CI=1.08-1.36).

Ms Laut said: "We found that a large proportion of STEMI patients did return to the labour market within 4 years but 14% came back to work later because of a prolonged system delay. We also discovered that after 8 years, people with a long system delay had a 21% increase in retirement rate."

She added: "The association between increased system delay and reduced work resumption and earlier retirement exists but we need more studies to find out why. System delay may directly impact on return to work by causing a reduction in the ventricular function of the heart or there may be other factors involved."

There were no differences between men and women in the effect of system delay, but the researchers found that men returned to work later than women. Ms Laut said: "We don't know the reason but it could be because we had a very small proportion of women in the study, and men may have more physically demanding work. Future studies are needed to

examine the impact of job demands on return to work."

The researchers also examined differences between patients who were married or unmarried. In contrast to the overall findings, unmarried patients had a shorter system delay but a greater probability of retirement. Ms Laut said: "Most unmarried people live in big cities and are close to the biggest catheterisation labs which could lead to shorter system delays. Their increased risk of retirement may be because they are more socially vulnerable or don't have the encouragement and support to stay at work."

She added: "Our results show that system delay is an important performance measure in treating patients with STEMI. A lot can be done within healthcare systems to make sure STEMI patients get quick access to PPCI, such as optimising pre-hospital diagnosis. Patients also need to react quickly to their symptoms and call an ambulance."

Ms Laut concluded: "There is a heavy economic burden for society if patients don't return to work after a heart attack. Investing in healthcare infrastructure and systems is value for money compared to the cost of people losing their ability to [work](#)."

Provided by European Society of Cardiology

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