

# One in four patients develop heart failure within four years of first heart attack

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One in four patients develop heart failure within four years of a first heart attack, according to a study in nearly 25 000 patients presented today at Heart Failure 2016 and the 3rd World Congress on Acute Heart Failure by Dr Johannes Gho, a cardiology resident at the University Medical Center Utrecht, in Utrecht, the Netherlands. Risk factors included older age, greater socioeconomic deprivation, and comorbidities such as diabetes.

"Heart failure is a major medical problem with a high chance of hospitalisation and death," said Dr Gho. "Patients with [ischaemic heart disease](#) are at the highest risk. This includes those who have had a myocardial infarction, also called heart attack."

He continued: "Research studying incidence of heart failure following myocardial infarction is limited and mainly stems from the thrombolytic era, when drugs were used to dissolve blood clots. Today the preferred treatment for [acute myocardial infarction](#) is percutaneous coronary intervention (PCI) where a stent is used to open the blocked artery."

The current study used prospectively collected [electronic health records](#) to investigate the contemporary incidence and risk factors for heart failure after a first myocardial infarction. "Finding which heart attack patients are most likely to get heart failure would help us target preventive therapies," said Dr Gho.

The study used data from the UK based CALIBER (CARDiovascular

research using Linked Bespoke studies and Electronic health Records) programme. Primary care records were linked to hospital admissions and national registries on myocardial infarction and mortality.

The researchers identified 24 745 patients aged 18 years or older who experienced a first myocardial infarction between 1 January 1998 and 25 March 2010 and had no prior history of heart failure. Patients were followed up for a median of 3.7 years for the first recorded heart failure diagnosis in any of the CALIBER sources.

During follow-up, 6005 (24.3%) patients developed heart failure. Dr Gho said: "Around one in four patients developed heart failure within four years of a first myocardial infarction in the current era. This was relatively stable over time possibly due to two competing trends. On the one hand, PCI has improved treatment for myocardial infarction so the risk of heart failure would be expected to decrease. On the other hand, because treatment has improved, more patients are alive after a heart attack to subsequently get heart failure."

A number of factors were associated with an increased risk of developing heart failure after a first myocardial infarction. Every ten year rise in age was associated with a 45% increased risk. Greater socioeconomic deprivation (5th versus 1st quintile) was associated with a 27% increased risk.

The following conditions were associated with a higher risk of developing heart failure after a first myocardial infarction: diabetes (44% increased risk), atrial fibrillation (63% increased risk), peripheral arterial disease (38% increased risk), chronic obstructive pulmonary disease (28% increased risk), ST elevation myocardial infarction at presentation (21% increased risk), and hypertension (16% increased risk).

Dr Gho said: "Previous research looking at all cause heart failure, not only after [myocardial infarction](#), has found similar [risk factors](#). Our large cohort study confirms that these are also risky conditions for [heart attack patients](#) in the current era."

He concluded: "Identifying these prognostic factors in [heart attack](#) patients could help us predict their risk of developing [heart failure](#) and allow us to give treatments to reduce that risk."

Provided by European Society of Cardiology

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