

## **Women with acute heart failure have similar in-hospital mortality to men but are less treated**

European Society of Cardiology

Women with acute heart failure have similar in-hospital mortality to men but are less treated in the real world, according to results from the global ALARM-HF registry presented today at the ESC Congress 2012. The findings were presented by Dr John T. Parissis from Greece.

Acute heart failure (AHF) is a frequent clinical situation with high short- and long-term mortality as well as high hospitalization rates. The Acute Heart Failure Global Registry of Standard Treatment (ALARM-HF) is an in-hospital chart audit survey which includes patients hospitalized for AHF in Europe, Latin America and Australia. A total of 4,953 patients admitted to Cardiology Departments (67%) or Intensive Care Units (33%) for AHF in 666 hospitals among 9 countries (France, Germany, Italy, Spain, UK, Greece, Turkey, Mexico and Australia) were enrolled. Women accounted for 37% of the study population.

The present study is a sub-analysis of ALARM-HF, targeted to explore gender-related differences in patients hospitalized for AHF. The researchers found significant differences between women and men in clinical presentation, co-morbidities, precipitating factors and treatment patterns. Length of stay and in-hospital mortality were similar in women and men.

Compared to men, women presented with AHF at an older age and with higher rates of de novo heart failure. Based on AHF classification, women were less than half as likely to present with cardiogenic shock than men, but more than twice as likely to present with right heart failure.

Women presented on admission to hospital with higher systolic blood pressure and higher heart rate. Women had higher left ventricular ejection fraction and the majority of women had preserved ejection fraction.

Regarding co-morbidities, when compared to men, women more frequently had atrial fibrillation, valvular heart disease, diabetes mellitus, obesity, anaemia and depression. But women had lower rates of cardiomyopathy, coronary artery disease (CAD), dyslipidemia, smoking and asthma or chronic obstructive pulmonary disease (COPD) than men. There were similar rates of arterial hypertension and peripheral vascular disease in both genders.

In both genders, acute coronary syndrome (ACS) was the most common precipitating factor for AHF. However, women were less likely than men to have ACS and more likely to have infection or worsening valvular heart disease.

On admission, a lower percentage of females were on angiotensin II receptor

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blockers (ARBs), beta-blockers, aspirin and clopidogrel due to the presence of underlying co-morbidities and less CAD. However, more females were on digitalis and vitamin K antagonists due to the higher incidence of atrial fibrillation.

Regarding interventions, continuous positive airway pressure (CPAP) and mechanical ventilation were equally offered to females and males. Fewer females underwent percutaneous coronary intervention (PCI), coronary artery bypass graft (CABG) surgery and were supported by intra-aortic balloon pump (IABP).

Despite the improvement of medical management at discharge, the aforementioned differences in pharmaceutical therapies (especially in beta-blockers) remained in favour of males.

Mean length of stay in a coronary or intensive care unit (CCU/ICU) was similar between genders. Importantly, the overall in-hospital mortality and the in-CCU/ICU mortality were also similar in females and males. "The presence of higher ejection fraction and less CAD in women may positively affect survival in women," said Dr Parissis, who is assistant professor of cardiology at the University of Athens in Greece and a member of the ALARM-HF Steering Committee. "On the other hand, the existence of other serious co-morbidities and under-prescription of life saving medications such as beta-blockers may counteract this positive effect on their in-hospital survival. This point may explain the similar mortality rate between genders."

"The presence of diverse predictors and pharmaceutical modalities may explain the similar in-hospital mortality rates in both genders," he added. "Perhaps there are differences in the pathophysiology of AHF between women and men which should be taken into account in order to achieve gender-tailored management. Finally, a more intensive implementation of heart failure guidelines is required to optimize life saving medications especially in women."

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