Age differences in mortality in patients undergoing surgery for infective endocarditis

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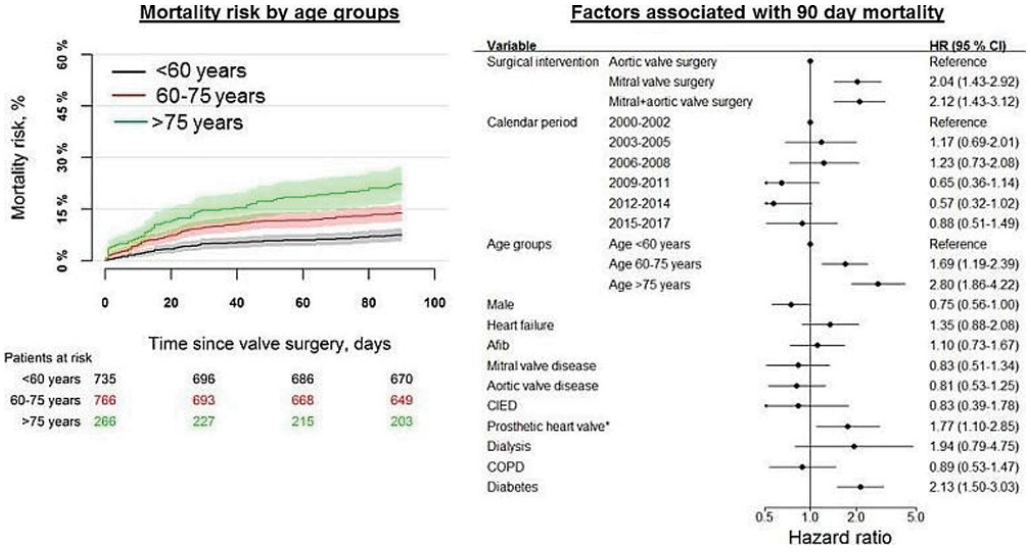
Background: Infective endocarditis (IE) is associated with high mortality. Surgery may improve survival, but the intercept between benefit and harm is hard to balance and may be closely related to age.

Purpose: To examine the in-hospital and 90-day mortality in patients undergoing surgery for IE and to identify differences between age groups and type of valvular intervention.

Methods: By crosslinking nationwide Danish registries we identified patients with first-time IE undergoing surgical treatment in the period from 2000 to 2017. The study population was grouped in patients <60 years, 60–75 years, and ≥75 years of age. High-risk subgroups by age and surgical valve intervention (mitral vs aortic vs mitral+aortic) during IE admission were examined. Kaplan Meier estimates was used to identify 90-day mortality by age groups and multivariable adjusted Cox proportional hazard analysis was used to examine factors associated with 90-day mortality.

Results: We included 1,767 patients with IE undergoing surgery, 735 patients <60 years (24.1% female), 766 patients 60–75 years (25.8% female), and 266 patients >75 years (36.1% female). The proportion of patients with IE undergoing surgery was 35.3%, 26.9%, and 9.1% for patients <60 years, 60–75 years, and >75 years, respectively. For patients with IE undergoing surgery, the in-hospital mortality was 6.4%, 13.6%, and 20.3% for patients <60 years, 60–75 years, and ≥75 years of age, respectively and mortality at 90 days were 7.5%, 13.9%, and 22.3%, respectively. Factors associated with an increased risk 90-day mortality were: mitral valve surgery and a combination of mitral and aortic valve surgery as compared with isolated aortic valve surgery, patients 60–75 years and >75 years as compared with patients aged <60 years, prosthetic heart valve prior to IE admission, and diabetes, Figure. Patients >75 years undergoing a combination of mitral and aortic valve surgery had an in-hospital mortality of 36.3%.

Conclusion: In patients undergoing surgery for IE, a stepwise increase in 90-day mortality was seen for age groups, highest among patients >75 years with a 90-day mortality of more than 20%. Patients undergoing mitral and combined mitral and aortic valve surgery as compared to isolated aortic valve surgery were associated with a higher mortality. These findings may be of importance for the management strategy of patients with IE.



Mortality risk