

## **Octogenarians and cardiac surgery in the twentieth century: the Emilia Romagna experience**

Gabbieri D., Pacini D., Zussa C., Pigni F., Contini G.A., Fortuna D., De Palma R., Barattoni M.C., Ghidoni I.

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### ***Introduction and aims:***

Nowadays cardiac surgery is performed always more frequently in octogenarians. This study reviewed the Emilia Romagna experience with cardiac operations in patients aged  $\geq 80$  years, and evaluated the impact of surgery on the survival compared with the regional octogenarian population.

### ***Materials and methods:***

Data from 1822 patients aged  $\geq 80$  years undergoing cardiac surgery between 2002 and 2007 were prospectively collected in a regional registry and compared with 14155 younger patients undergoing similar procedures during the same period.

### ***Results:***

Compared with patients 60 to 69 and 70 to 79 years old, more octogenarians were women (25.4% versus 36.5% versus 49%,  $p < 0.05$ ), needed urgent operations (21.3% versus 22.6% versus 26.3%,  $p < 0.05$ ), underwent coronary artery bypass grafting plus valve/s procedure/s (9.9% versus 16.5% versus 22.8%,  $p < 0.05$ ) and isolated valve/s procedure/s (24% versus 26.8% versus 34%,  $p < 0.05$ ), and had unstable angina (10.7% versus 11.5% versus 14.8%,  $p < 0.05$ ), congestive heart failure class IV (5% versus 6.4% versus 8.8%  $p < 0.05$ ), haemodynamic instability (1.9% versus 1.7% versus 2.7%,  $p < 0.05$ ), NYHA functional class III-IV (25.3% versus 33.3% versus 40.1%,  $p < 0.05$ ), extracardiac arteriopathy (23.5% versus 29.1% versus 31.9%  $p < 0.05$ ) and systemic hypertension (73% versus 76.6% versus 79.6%  $p < 0.05$ ). In-hospital mortality resulted significantly reduced in comparison with the predicted logistic EUROscore mortality ( $z$  score  $< 1.96$ ): 2.5% versus 5.9%, 3.9% versus 10.2%, and 6% versus 15.7% in patients 60 to 69, 70 to 79, and  $\geq 80$  years old, respectively. Multivariate analysis confirmed older age as independent risk factor for in-hospital mortality. Median 3-year survival was 77.5% for octogenarians and 87.9% for patients aged  $< 80$  years, respectively ( $p < 0.05$ ). The survival curves of octogenarians after cardiac surgery and of the regional population matched for sex and age were similar, with 77.5% and 79.7% of 3-year survival, respectively.

### ***Conclusions:***

Cardiac surgery can be performed in octogenarians with acceptable mortality and excellent 3-year survival, comparable with the survival of the overall regional octogenarian population.