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## CABG in Octogenarians?

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Our population is aging and so is our patient profile. We had the experience of getting some of our octogenarian patients getting through coronary artery bypass graft (CABG) surgery well. So, I was intrigued when I came across a paper from Mayo Clinic on the outcomes of CABG in 1283 octogenarians. They retrospectively studied consecutive patients aged 80 years or more who underwent primary isolated CABG between 1993 and 2019 [1].

Overall operative mortality was 4% but showed a significant decrease during the study period. Median follow up was 16.7 years. Median survival at 5 years was 67.9% while that at 10 years was 31.1% and 8.2% at 15 years. Median survival time was 7.6 years compared with 6.0 years for age and sex matched octogenarians in the general United States population ( $P < 0.001$ ) [1].

Significant risks factors for mortality on multivariable analysis were older age, recent atrial fibrillation or flutter, diabetes mellitus, history of smoking, cerebrovascular disease, immunosuppressive status, extreme levels of creatinine, chronic lung disease, peripheral vascular disease, decreased ejection fraction and increased Society of Thoracic Surgeons predicted risk score. The authors concluded that although CABG in octogenarians carries a higher surgical risk, it may be associated with favourable outcomes and increase long-term survival [1].

Reviewing the literature on this aspect, I found a few more studies of interest. A study published in 2012 compared surgical myocardial revascularization with percutaneous coronary intervention (PCI) with drug eluting stents in octogenarians [2]. It was also a retrospective study of patients at one center in Israel, between 2002 and 2006. 120 patients had undergone PCI and 181 had undergone CABG. As expected, surgical patients had higher rates of left main disease, triple vessel disease, peripheral vascular disease, emergent procedure, and previous myocardial infarctions. Early mortality was 9.9% in the CABG group while it was 2.5% in the PCI group.

But there were no differences in the one year and four year actuarial survival rates, which were 90% and 68% for PCI group and 85% and 71% for CABG group ( $P = 0.85$ ). Four year rate of freedom from recurring angina was 58% for the PCI group while it was 88% for CABG group ( $P < 0.001$ ). Freedom from reintervention were 87% and 83% for PCI group and 99% and 97% in CABG group at 1 year and 4 years ( $P < .001$ ). The authors concluded that octogenarian CABG patients were sicker and experienced higher rate of early mortality. But the two strategies had similar rates of late mortality and major adverse cardiac events. Fewer reinterventions and recurring angina occurred follow CABG [2].

Another study of CABG in octogenarians from Canada, published in 2017 evaluated those who underwent isolated CABG between 2002 and 2008. The patients were matched 1:2 with a randomly selected control group under age 80 years. Patients were identified from the Alberta Provincial Project for Outcomes Assessment in Coronary Heart Disease (APPROACH) registry [3].

304 octogenarians and 608 patients aged less than 80 years were included in the analysis. Octogenarians had a significantly higher predicted mortality by Society of Thoracic Surgeons (STS) score, additive EuroSCORE, logistic EuroSCORE, and EuroSCORE II, compared to patients under the age of 80 years. Observed mortality was 2% for patients aged 80 years and older and 1% for patients under 80 years. It was also noted that all risk prediction models assessed overestimated surgical risk. The authors suggested that inclusion of new variables into the risk models, such as frailty, may allow for more accurate prediction of true operative risk [3].

## References

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