

# **CORONARY ARTERY SURGERY IN OCTOGENARIAN PATIENTS. COMPARISON OF ON-PUMP AND OFF-PUMP PUMP TECHNIQUE WITH USE OF META-ANALYSIS WITH ADDITION OF OWN MATERIAL.**

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**Introduction:** Coronary artery surgery conventionally is performed on cardiopulmonary bypass, but since about 15 years a new instruments allow surgeon to apply new technique called off-pump beating heart revascularization. It was expected, that this new method should reduce the number of postoperative complications in all groups of patients surgically treated for coronary artery disease. But despite of many scientific investigations it was impossible to show the evidence about it, moreover some data suggest that in younger patients beating heart surgery is worsening the long-term results.

Demographic changes in our population, but also revolution in interventional treatment of coronary artery disease, led to situation when average age of patient referred for surgery is increasing. Octogenarians are definitely a high-risk group of patients. According to the opinion of many surgeons, the off-pump technique should be beneficial for elderly population.

**Aim of the study:** To compare the outcomes of surgery in octogenarian patients who underwent coronary artery bypass with or without cardiopulmonary bypass.

**Material and Methods:** Systematic review of all published studies comparing on- and off-pump technique in patients aged 80 years or older was performed. Additionally 175 cases from our institution operated between 1999 and 2009 were included. Finally the cohort of 5166 patients was analyzed, 3133 were conventionally treated with use of cardiopulmonary bypass, 2033 received off-pump surgery. Meta-analysis was performed using random effects model. The following points of interests were analyzed: mortality, stroke, respiratory failure, renal failure, bleeding, atrial fibrillation and intraaortic balloon pump support.

**Results:** Early mortality rates were lower in the off-pump group. Moreover the risks of neurological complications and postoperative respiratory failure were decreased when patient is treated less invasively. Meta-analysis of one-year mortality showed better survival after beating heart surgery, but the difference was not significant. The Kaplan-Meier survival curves after coronary bypass surgery in octogenarians look similar to expected survival for non-treated population. The probability of survival of 5 years after surgery in men subgroup is even better than expected for general men population in our country.

**Conclusion:** Off-pump coronary artery bypass may be superior to conventional technique in octogenarian patients.