Managing the treatment of the patients with stable angina like a chess player: making moves considering the next move of atherosclerosis

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We read the article entitled Coronary revascularization in the elderly with stable angina with interest.[¹]

In the guidelines related to stable coronary artery disease, it does not exist any age-related net proposals for the patients with stable angina pectoris.[²,³]

There are many differences between individuals aged 70–80 years and those aged 50–60 years. The most obvious differences between these age groups are accompanied comorbid diseases and the status of affected vessels from atherosclerosis. Furthermore, there are also differences between these age-groups in terms of the life expectancy. In the younger cases, it seems reasonable to decide on the treatment options which wouldn’t make subsequent procedures more difficult, because repeat revascularization interventions may be needed due to the relatively longer lifetime. Patients who underwent coronary artery bypass grafting (CABG) surgery in the younger ages might be in a desperate position ten years after surgery. For example, a 65-year-old, symptomatic patient who underwent CABG surgery ten years ago may be admitted to the hospital with totally occluded native coronary arteries and occluded saphenous vein grafts and solely a patent left internal mammary artery (LIMA)-left anterior descending artery graft. This is not a rare encountered situation in routine clinical practice. At the ages of around 85 years, this desperate coronary anatomy may lead less severe symptoms due to the decreased age-related-mobility. For these reasons, we believe that the revascularization methods to be applied to younger patients should be chosen from the percutaneous interventions which wouldn’t make subsequent percutaneous and surgical interventions more difficult.

Bioresorbable vascular scaffold (BVS) systems offers significant advantages over metallic stents. The struts of BVS are completely absorbed in three years. Thereby, unlike the metallic struts, the struts of BVS don’t create any handicap for the subsequent interventions. However, the implantation of BVS is important. If the BVS struts are not well apposed, the struts are not precisely absorbed and the risk of stent thrombosis is increased.[⁴] BVS related complication rates may be more frequently encountered in the elderly due to the increased burden of vascular calcification.

In younger patients, it seems reasonable to prefer BVS because it facilitates the subsequent revascularization procedures in their remaining longer lifetime. In elderly, surgery may be preferable if the surgical risk is low and if LIMA graft is obtainable. Thereby, the elderly patients are less frequently exposed to the invasive procedures and their complications in their remaining lifetime.

Consequently, while deciding the revascularization method, we should act like a chess player considering the next move of the disease.

References

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Authors’ reply

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We appreciate Yiğiner Ö, et al. interested to our article Coronary revascularization in the elderly with stable angina. We would like to notice some ideas. We believe that CABG is in fact more traumatic method compared with percutaneous coronary intervention (PCI) and associated with several difficulties in case of future PCI or heart surgery. As a consequence, PCI should be considered in middle age patients with coronary heart disease in most cases as a selection method. Although, there are situations, when PCI is associated with high risk, technical complications or inability to restore adequate cardiac function due to large zone of myocardial impairment, left ventricular aneurism, valve pathology, diffuse multiple calcification of coronary arteries, high SYNTAX score index (> 32), comorbid pathology (diabetes mellitus) etc. In these cases, cardiac surgery should be preferable. It’s known, that during 10 years after CABG about 80% venous aorto-coronary bypass grafts are occluded: saphenous veins grafts patency (< 70% diameter stenosis) is 60% at five years and 19% at 10 years. Herewith, internal mammary bypass grafting (MBG) demonstrates good results and superiority compared to coronary stenting. MBG may be performed with minimally invasive operative access and off-pump. Besides that, there is more and more data in modern literature about multivessel CABG with bilateral internal thoracic arteries (BITA). BITA is a valuable and safe procedure, with favorable results in terms of morbidity and mortality at a 5 years’ follow-up.

Hence BITA may be used as effective and safe procedure instead of PCI in elderly and senile patients with severe multilevel coronary artery disease.

In modern sources BVS shows significant advantage over bare metal stents. However, due to the calcification of coronary lesion is more often in senile patients, BVS implantation in these patients may lead to their incomplete apposition, which leads to increased risk of stent thrombosis. Furthermore, old age is associated with a lack of commitment to the reception of drugs, in particular - of dual antiplatelet therapy.

In addition to the above, taking into account the lower life expectancy in this age group, the implantation of metal bare stents in such patients may be preferred.