Previous percutaneous coronary intervention may increase symptom recurrence and adverse cardiac events following surgical revascularization

Önceden geçirilmiş perkütan koroner girişim cerrahi revaskülarizasyon sonrası semptom rekürrensini ve majör kardiyak olayları artırabilir mi?

Dear Editor,

With great interest we read the recently published original investigation by Gürbüz et al. in the June issue of the Anatolian Journal of Cardiology (1). Former percutaneous coronary intervention (PCI) is supposed to be a new, independent risk factor for a negative outcome after coronary artery bypass grafting (CABG). The authors retrospectively analysed 611 patients, who underwent CABG. The number of patients who developed angina despite an initially successful CABG was significantly increased in patients with a history of prior PCI with 11.6 % compared with 2.9 % without PCI. Furthermore, Gürbüz et al. (1) revealed a higher rate of myocardial infarction (4.7 PCI group vs. 1.0 % no PCI group), surgical reintervention (12.1 vs. 2.1%), cardiovascular events (3.2 vs. 0.5%), sudden cardiac death (2.6%/0.5%) and death (10.0%/3.6%) during a follow up of 29 months. Interestingly, Thielmann et al. confirmed these observations (2). In a single centre study, these investigators showed a threefold higher perioperative risk for in-hospital mortality and a twofold higher risk for major adverse cardiovascular events during subsequent elective bypass surgery for patients with previous PCI (2).

However, some issues are worth to mention: First, in both trials a notably selection bias has to be considered. Patients with prior PCI might have a more progressive coronary artery disease (CAD). Coronary artery bypass grafting provides improved reperfusion, but is not able to inhibit the progress of arteriosclerosis. In that respect, the need for CABG after PCI might be a surrogate for rapid progression of CAD. Some other questions are not specified: What was the reason for CABG after PCI e.g. thrombotic occlusion, restenosis or de novo stenosis? What was the reason for the initial PCI e.g. stable or unstable angina or myocardial infarction? Was PCI perhaps the inadequate therapy and CABG performed not on time? All these concerns may have an impact on cardiovascular outcome of these patients.

Second, as we have learnt from large clinical trials, diabetes and hyperlipoproteinemia are known as significant predictors for worse outcome (3,4). However, in Gürbüz´ study, a significantly higher incidence of hyperlipidemia (56.5 %) and diabetes (21.9 %) in the no PCI/CABG group, who had a lower mortality and less adverse cardiovascular events compared to 26.8 % and 11.1% in the PCI/CABG group, was reported.

Although only patients were included in the analysis, who survived the first 30 days, an extraordinary high mortality rate (10%) was reported in the PCI/CABG group. Using registry data, the total (including first 30 days after CABG) perioperative and in-hospital mortality averages about 2 to 5% for all patients in the United States (5,6) and 7% in Brazil (7).

In conclusion: In our opinion the message is not as simple as declared. Further investigations need to be done to optimize the use and timing of PCI. With the advent of drug eluting stents the number of postinterventional complications may decrease.

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Author's Reply

Dear Editor

We appreciate the interest of our colleagues in our recent article regarding the effect of previous percutaneous coronary intervention (PCI) on midterm outcome following coronary artery bypass graft surgery. The authors of the letter had reviewed the article carefully and made some insightful comments.

The recent expansion in the indications of percutaneous coronary interventions has increased the number of patients with a history of one or more coronary procedures.

The question, regarding the rapid progression of atherosclerosis in patients who need a coronary artery bypass graft surgery (CABG) after a PCI is valid and has been mentioned in the text. We also agree that the possibility of exaggerated vessel wall response to any coronary procedure may be a risk factor for further coronary events in some patients.

The indication for CABG after PCI is mentioned in the article. The reasons for the initial PCI procedures were not mentioned in the text. As most of these patients had their initial PCI in other centers and in other towns, we did not have access to the specific reasons for the initial PCI. We agree that this information would have clarified some differences in the outcomes. We will not be able to comment on the question whether PCI was an inadequate initial procedure for some of these patients since all cardiologic interventions were performed by competent American Board Certified cardiologists.

The issue of no-PCI CABG patient population having fewer incidences of diabetes and hyperlipidemia is obvious. Patients with diabetes and other risk factors for recurrent stenosis or complications after PCI are usually referred for surgical revascularization as the initial treatment.

The patient mortality over the follow-up period was 10% for the PCI-CABG group. One must not forget that this is over a period of 29 months and not the 30 day mortality. The numbers provided by the authors of the letter reflect early postoperative CABG mortality and does not imply on the survival statistics mentioned in this study. We also would like to remind the authors of the letter that the cause of death was not cardiac in a number of patients in both groups.

As conclusion, this is a retrospective study and we agree that further studies are needed to identify the patient population which will benefit most from CABG as the initial form of treatment for severe coronary atherosclerosis as opposed to PCI.

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