PAPERS AT THE END OF CARDIOLOGICAL TRAINING

Thromboaspiration in patients with ST-elevation myocardial infarction – the experience of the Interventional Cardiology Department, "Prof. C.C. Iliescu" Institute

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No-reflow is defined as an inadequate coronary irrigation, following an occlusion of an epicardial artery, in the absence of any evidence indicating a persistent mechanical obstruction of the vessel. Therefore, it is associated with a sustained myocardial ischemia, and is an independent mortality predictive factor, regardless of the size of the ischemic area.

Intracoronary thrombus aspiration is one of the methods of prevention used to avert the occurrence of this phenomenon during primary coronary angioplasty for STEMI patients, with a classe of recommendations IIa, level of evidence B in the latest ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation.

OBJECTIVES

This paper aims to present the demographical, clinical, angiographic and prevention techniques for the no-reflow phenomenon and angiographic evidence to support the use of these methods. We used the TIMI and myocardial blush grade (MBG) to diagnose no-reflow.

METHOD

This is a retrospective cohort study, using the database available to the "Prof. Dr. C.C. Iliescu" Institute for Cardiovascular Diseases, analyzing data obtained between the 1st of July 2010 and the 30th of June 2012. This data included 297 patients diagnosed with acute myocardial infarction, with ST elevation, which benefited from the use of ASAP or EXPORT intracoronary thrombus aspiration devices.

RESULTS

Among the demographical characteristics we notice the age group (40-64 years old) with the highest prevalence (64%) and the fact that 77% of the patients are male. As associated risk factors, we mention a relatively equal distribution between smokers and non-smokers (58% smokers vs. 42% non-smokers) and an important association of diabetes melittus (71% diabetics vs. 29% non-diabetics).

The positions of the lesions show a slight predominance of the left anterior descending (LAD) vs. Right Coronary Artery (RCA) (46% vs. 39%). Considering the time passed since the debut we divided the patients into 4 groups. We have observed a relatively equal proportion between the patients that came in the first 3 hours -group 1 (96 pts), between 3-6 hours - group 2, group 3 came between 6-12 h (80 pts). The rest of 25 patients came to the hospital too late, more than 12 h from the debut. Then, we compared the first three groups of patients considering the therapeutic approach and angiographic result. The use of Integrilin is discerned for 70% of the patients in Group 1, 63% of the patients in Group 2 and only for 51% of the patients in Group 3. Thromboaspiration, as an adjuvant to eliminate the angiographically visible thrombi, was used in a significant proportion in all three groups: 81%, 83% and 74%. The use of these techniques - adjuvant to stent implantation - lead to remarkable results: 84% TIMI 3 MBG 3 flux and 8% TIMI 3 MBG 2 flux for the first group, 73% TIMI 3 MBG 3 and 11% TIMI 3 MBG 2 flux for the second group and 64% TIMI 3 MBG 3 and 20% TIMI3 MBG 2 flux for the third group. It is important to men-

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tion that distal embolisms were present in only 12% of the cases and the no-reflow phenomenon, defined as TIMI <3, in 8%, 16% and 16% of the cases. In-hospital general mortality was 4%.

CONCLUSIONS

The use of no-reflow prevention methods, with classe of recommendations IIa, level of evidence B in the Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation, lead to a decrease in the incidence of the phenomenon in the presence of an intracoronary thrombus from 30-50% (reported in the literature) to 16% (with an even lower incidence - 8%) in case of early presentation.

Conflict of interests: none.