

Differences in serum concentration of vascular cell adhesion molecules (sVCAM-1) in patients treated with percutaneous balloon dilatation with stent implantation and patients treated with paclitaxel-coated balloon

Đeiti Prvulović*,
Irzal Hadžibegović,
Božo Vujeva,
Krešimir Gabaldo,
Ognjen Čančarević

General Hospital "Dr. Josip Benčević", Slavonski Brod, Croatia

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***ADDRESS FOR CORRESPONDENCE:** Đeiti Prvulović, Opća bolnica "Dr. Josip Benčević", Andrije Štampara 42, HR-35000 Slavonski Brod, Croatia. / Phone: +385-91-554-7188 / E-mail: deiti.prvulovic@gmail.com

ORCID: Đeiti Prvulović, <http://orcid.org/0000-0002-8041-1197> · Irzal Hadžibegović, <http://orcid.org/0000-0002-3768-9134> · Božo Vujeva, <http://orcid.org/0000-0003-0490-3832> · Krešimir Gabaldo, <http://orcid.org/0000-0002-0116-5929> · Ognjen Čančarević, <http://orcid.org/0000-0002-1285-8042>

Aim: The aim was to determine soluble vascular adhesion molecule 1 (sVCAM-1) before and 24 hours after the percutaneous coronary intervention (PCI) between the group of patients treated with balloon dilatation with stent implantation, with drug-eluting balloon (DEB) and the control group, to compare the obtained differences and their relationship with clinical and procedural parameters.

Patients and Methods: The study included 15 patients treated with predilatation and stenting (group A), 15 patients treated with DEB (group B) and 24 patients in the control group. We measured sVCAM-1 before the procedure and 24 hours after the procedure. We compared sVCAM-1 between groups, and their relationship with clinical and procedural parameters.

Results: Group A had significantly higher sVCAM-1 in the first measurement in relation to both other groups ($p < 0.05$). There was a significant decrease between two measurements in the group A ($p = 0.041$), increase in the group B ($p = 0.017$), and no changes in the control group. There were no significant differences in demographic and clinical characteristics, except for a significantly smaller proportion of patients with previous myocardial infarction (MI) in control group and significantly lower average time elapsed from myocardial infarction in group B. There was positive correlation between the number of balloon inflations and the total duration of inflation and sVCAM-1 24 hours after the procedure, but not statistically significant. In the subanalysis we found no statistically significant difference in the dynamics of sVCAM-1 depending on history of earlier MI, PCI and history of statin therapy, and we noted statistically significant ($p = 0.024$) increase of sVCAM-1 24 h after the procedure among non-diabetic patients in group B.

Conclusion: 1. significant increase in sVCAM-1 24 hours after the procedure in patients of group B could be caused by procedural differences done in groups A and B, but possible reason is in some of the characteristics of the DEB. 2. significantly higher value sVCAM-1 before the procedure in group A is because we included patients who have had a myocardial infarction less than 3 months before the intervention. 3. results of this study rejected the hypothesis on the expected lower inflammatory response in patients treated with DEB, but they provide useful information for future studies¹⁻³ which should clarify the mechanisms of endothelial damage during PCI.

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LITERATURE

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