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Coronary In-Stent Restenosis After Sirolimus-Eluting Stent Implantation is Accompanied by Elevated Plasma Level of Eosinophil Cationic Protein

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Abstract

Objectives. The main adverse reactions to coronary stents are in-stent restenosis (ISR) and stent thrombosis. The pathogenesis of these events seems to be related to delayed healing and allergic reactions to polymers, a process in which eosinophils seem to play an important role. Aim of this study was to assess the involvement of eosinophil cationic protein (a measure of eosinophil activation) in the development of in-stent restenosis after sirolimus-eluting stent (SES) implantation. Materials and methods. A total of 32 consecutive patients who underwent coronary angiography at 6 to 12 months after successful SES implantation were enrolled in this study. Blood plasma levels of eosinophil cationic protein (ECP) and total immunoglobulin E (IgE) were measured by enzyme-linked immunosorbent assay and of C-reactive protein (hs-CRP) by high-sensitivity nephelometry. Results. According to angiography data, ISR was observed in 13 patients, while 19 patients did not develop ISR. There were no significant differences between the values of hs-CRP, and IgE in patients with or without in-stent restenosis. By contrast, the ECP level was higher in patients with ISR compared to that in patients without restenosis [17.7 ng/ml (11.2-24.0) vs. 9.0 ng/ml (6.4-12.9), p=0.017]. The ISR was 62% in patients with ECP level ⩾11 ng/ml and 19% in patients with ECP level <11 ng/ml (P=0.019). Conclusions. These findings suggest that elevated eosinophils activation may play an important role in the pathogenesis of ISR after SES. Determination of ECP levels might be useful for identification of patients who are at high risk for ISR after coronary artery stent implantation.

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