

Effects of simvastatin withdrawal on serum matrix metalloproteinases in hypercholesterolaemic patients

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摘要

Abstract

BACKGROUND: Serum matrix metalloproteinase (MMP) levels have been related to clinical outcomes in patients with coronary artery disease. Though statin treatment might reduce serum MMPs the change of levels after statin withdrawal remains obscure. **MATERIALS AND METHOD:** Sixty-one consecutive hypercholesterolaemic patients whose lipid profiles had been well controlled by regular simvastatin (20 mg day⁻¹) treatment for more than 6 months were enrolled. Statin was discontinued after their lipid profiles reached the treatment goal of the ATP-III guideline. The lipid profiles, serum MMP-2, MMP-3 and MMP-9, tissue inhibitor of MMP and highly sensitive C-reactive protein (hsCRP) levels were measured on the day of simvastatin withdrawal and 120 days later. A further 50 hyperlipidaemia patients who had never received statin treatment (positive control group) and 28 healthy patients with normal lipid profiles (negative control group) were also studied as control groups. **RESULTS:** While the lipid profiles had been normalized, the levels of serum inflammatory markers were still higher in hypercholesterolaemic patients than in the healthy subjects. Up to 120 days after statin withdrawal there was no coronary event, but the lipid profiles and serum hsCRP levels had significantly rebounded in study patients. However, serum MMP-2 and MMP-9 levels remained unchanged and the MMP-3 level was even further reduced after statin withdrawal (115.04 +/- 84.54 vs. 92.71 +/- 66.71 ng mL⁻¹), P = 0.022). Moreover, the amplitudes of variation (%) of each parameter including MMPs, TIMP, hsCRP and lipid profiles after statin withdrawal were inversely correlated to their respective baseline levels before withdrawal (r = -0.702 to -0.284; P < 0.005). **CONCLUSIONS:** The effects of short-term discontinuation of statin were different on serum hsCRP and MMPs levels in hypercholesterolaemic patients. While lipid profiles and serum hsCRP level had rebounded the serum MMPs levels were still unchanged, or even reduced, suggesting the prolonged effect of statin treatment, especially on serum MMP-3 level up to 120 days after simvastatin withdrawal. Further work is required to clarify the situation both in terms of these serum markers

and clinical effects.

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