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THE EFFICACY OF HIGH-DOSE ATORVASTATIN ON EARLY RECURRENCE AFTER CATHETER ABLATION FOR PAROXYSMAL ATRIAL FIBRILLATION

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Background and objectives Circumferential pulmonary vein isolation (CPVI) has become a major treatment of atrial fibrillation (Af). However, the postprocedural early recurrence rate is still high, which may be related to postoperative inflammatory reaction. With pleiotropic effects, statins are expected to inhibit the inflammatory response and thus reduce the Af recurrence after catheter ablation. The authors sought to clarify the efficacy of a large dose of atorvastatin therapy for preventing early Af recurrence after CPVI.

Methods A total of 40 patients with paroxysmal Af and with hypercholesterolemia were randomly divided into two groups: control group (n=20) and high-dose atorvastatin intervention group (intervention group, n=20). Both groups received routine clinical medical treatment, and control group only received atorvastatin of £20 mg/day if indicated. Intervention group was given atorvastatin 80 mg 24 h and 40 mg 2 h before CPVI, and then atorvastatin 40 mg/day for 1 month. Blood samples were collected 24 h before and immediately after, 3 days and 1, 2 and 3 months after CPVI. The inflammatory markers including high-sensitivity C reactive protein (hs-CRP), interleukin 6 (IL-6) and tumour necrosis factor α (TNF α), and myocardial injury markers CK-MB and cTn-T were measured. The Af early recurrence was monitored clinically and by 72 h Holter monitoring.

Results At a mean follow-up period of 3 months, as compared with the control group, AF burden was significantly reduced in the intervention group ($p<0.05$), but there was no statistical difference on the rate of early recurrence between the two groups ($p>0.05$). The level of inflammatory markers including hs-CRP, IL-6, TNF α were increased immediately and 3 days after ablation in both groups. However, compared with those of the control group, the levels of hs-CRP, IL-6 and TNF α were significantly reduced in intervention group ($p<0.05$). As compared to baseline, ablation induced mild CK-MB ($p<0.05$) and cTn-T ($p<0.05$) elevations in both groups with similar elevations between the two groups ($p>0.05$, each).

Conclusions The pilot study showed that high-dose atorvastatin pretreatment and short-term enhanced intervention can reduce the peri-procedural inflammatory response and atrial fibrillation burden after catheter ablation, but does not decrease the early recurrence of atrial fibrillation.