

中文題目：生物製劑抑制乾癬性關節炎病人的頸動脈內膜增厚：比較腫瘤壞死因子抑制劑與非腫瘤壞死因子抑制劑的保護效果

英文題目：Biologics for inhibition of carotid intima-media thickness progression in patients with psoriatic arthritis: Comparison of protective effects of TNF inhibitor and non-TNF inhibitor

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**Background:** Atherosclerosis is a long-term but serious complication of psoriatic arthritis (PsA). It may be contributed by metabolic syndrome and chronic inflammation, and results in cardiovascular events. Carotid intima-media thickness (IMT) is an indicator of atherosclerosis. The purpose of this study is to investigate whether biologics can inhibit the progression of carotid IMT in patients with PsA.

**Methods:** It was a prospective and observational study proved by our Institutional Review Board. Adult patients who met the CASPAR criteria for PsA were enrolled. Bilateral carotid artery was assessed using an ultrasound machine Philips iu22 equipped with a 12 MHz linear probe. Carotid IMT was measured at the common carotid artery site 1 cm proximal to carotid sinus. The carotid IMT measurements were performed at baseline, month 12 and month 24. Clinical and laboratory data were collected at each time of ultrasound assessment.

**Results:** 186 PsA patients were enrolled. Of them, 70 patients were on biologics treatment (41 patients on tumor necrosis factor (TNF) biologics, 29 patients on non-TNF biologics). Age ( $46.1 \pm 11.0$  vs  $46.3 \pm 14.6$  years,  $p=0.9$ ), male ratio (68.6% vs 56.0%,  $p=0.09$ ), body mass index ( $26.5 \pm 5.0$  vs  $26.6 \pm 5.4$ ,  $p=0.87$ ), systolic blood pressure ( $131.1 \pm 18.9$  vs  $130.5 \pm 18.6$  mmHg,  $p=0.83$ ) and diastolic blood pressure ( $76.9 \pm 12.6$  vs  $75.9 \pm 13.2$  mmHg,  $p=0.59$ ) were similar between biologic group and non-biologic group. Blood tests including fasting glucose ( $107.6 \pm 22.6$  vs  $108.4 \pm 32.3$  mg/dL,  $p=0.89$ ), LDL-C ( $126.6 \pm 36.5$  vs  $114.8 \pm 34.7$  mg/dL,  $p=0.13$ ) and uric acid ( $6.2 \pm 1.7$  vs  $5.7 \pm 1.8$  mg/dL,  $p=0.16$ ) were also similar between biologic group and non-biologic group. However, baseline blood C-reactive protein (CRP) was significantly higher in biologic group than in non-biologic group ( $0.854 \pm 1.619$  vs  $0.331 \pm 0.657$ ,  $p=0.025$ ). At month 12, the change of carotid IMT from baseline ( $\Delta$ cIMT) was  $0.025 \pm 0.150$  mm in biologic group and  $0.008 \pm 0.149$  mm in non-biologic group ( $p=0.28$ ). At month 24,  $\Delta$ cIMT from baseline was  $0.005 \pm 0.162$  mm in biologic group and  $0.036 \pm 0.141$  mm in non-biologic group ( $p=0.16$ ). In

subgroup analysis, TNF biologic group had  $\Delta$ cIMT  $0.037\pm 0.145$  mm (vs non-biologic group,  $p=0.12$ ) at month 12 and  $\Delta$ cIMT  $0.036\pm 0.137$  mm (vs non-biologic group,  $p=0.98$ ) at month 24. Non-TNF biologic group had  $\Delta$ cIMT  $0.008\pm 0.157$  mm (vs TNF biologic group,  $p=0.27$ ; vs non-biologic group,  $p=0.99$ ) at month 12 and  $\Delta$ cIMT  $-0.043\pm 0.189$  mm (vs TNF biologic group,  $p=0.034$ ; vs non-biologic group,  $p=0.025$ ) at month 24.

**Conclusions:** Our study showed TNF biologics inhibited the progression of carotid IMT during month 12 to 24. Instead, non-TNF biologics inhibited the progression of carotid IMT during month 0 to 12 and further regressed the carotid IMT during month 12 to 24. Biologics had protective effects on atherosclerosis through blocking proinflammatory cytokines and eliminating inflammation.

**Keywords:** biologics; carotid intima-media thickness; psoriatic arthritis; ultrasound