

### The Effect of Beraprost Sodium on Peripheral Atherosclerosis and MMP-9, VEGF in Type 2 Diabetes Mellitus Patients

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**Aim:** This study was to compare the effect of Beraprost Sodium with Aspirin on the condition of peripheral atherosclerosis(AS) and MMP-9, VEGF in type 2 diabetes mellitus(T2DM) patients. **Methods:** 40 patients with T2DM complicated by peripheral AS were randomly divided into A and B groups. Patients in Group A were treated by Beraprost Sodium and Aspirin, while patients in Group B were treated only by Aspirin. All the patients were given corresponding basic therapies for diabetes and other diseases during the one-year study. Carotid intima-media thickness(CIMT) and artery parameters in both lower limb arteries(anterior tibial, posterior tibial, dorsal pedal arteries) were measured by Color Doppler Ultrasound, and the concentrations of MMP-9, VEGF, VCAM-1, TNF- $\alpha$ , SOD and nitrotyrosine in sera were measured by ELISA. **Results:** After the one-year therapy, the average of CIMT in both groups was significantly reduced, especially for right CIMT in group A(1.444 $\pm$ 0.4938 to 1.256 $\pm$ 0.4090, P=0.019). The results of the primary targets of observed AS parameters in lower limb arteries including the changes of inner diameters, maximal atheromatous plaques, largest stenosis rates, highest flow and velocity have been improved in both groups, while the improvement in group A was significantly larger(data showed in table 1 and 2, P<0.05). The tendency of the concentrations of MMP-9 and VEGF in sera of both groups showing in a declining curve was more significant in group A. The concentrations of VCAM-1, TNF- $\alpha$ , SOD and nitrotyrosine in group A were decreased but without statistical significance. **Conclusion:** The combination of Beraprost Sodium and Aspirin could effectively improve the condition of peripheral AS and decrease the aggregation of platelets in patients with T2DM.

Table 1: The inner diameters of arteries in Group A before and after treatment

	right dorsal pedal		left posterior tibial		right posterior tibial	
	before	after	before	after	before	after
Mean	2.036	2.182	2.200	2.627	2.136	2.660
SD	0.5679	0.5016	0.3768	0.3069	0.3641	0.4766

Table 2: The highest velocity of arteries in Group A before and after treatment

	left anterior tibial		right anterior tibial	
	before	after	before	after
Mean	49.858	69.133	50.442	74.333
SD	17.3499	15.6534	16.2482	13.1023