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Prostciclyn Analogue (PGI2) Infusion is able to Early Differntiate Successful from Unsuccessful Lower Limb Angioplasty in Diabetic Patients

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Peripheral angioplasty (PTA) is a widely used technique to revascularize patients with Critical Limb Ischemia (CLI) including diabetic patients. It has been demonstrated that, even after a successful PTA, Transcutaneous foot Oxymetry (TcPO2) increases slowly and requires two/three weeks from PTA before reaching values > 30 mmHg that indicates an effective revascularization. In many occasion, immediately after PTA, TcPO2 values remain < 30 mmHg and therefore the clinician does not know whether the revascularization has been successful or not. Prostacyclin analogue (PGI2) infusion has been largely utilized to threat patients with CLI, because its vasodilatory effects. We have hypothesized that when a successful PTA has mechanically removed the arterial stenosis/obstructions PGI2 infusion is able to induce a fast increase of foot TcPO2 values, while when PTA has been ineffective also PGI2 infusion is ineffective and therefore foot TcPO2 values still remain low.

Therefore the aim of this work is to test the effect of PGI2 infusion in diabetic patients that after a PTA of the lower limbs have still foot TcPO2 values < 30 mmHg.

We have tested 30 diabetic patients that the day after a technically successful PTA showed a foot TcPO2 < 30 mm Hg. They were treated by PGI2 infusion (0.5-2 ng /Kg/min for six hours/three days). TcpO2 was recorded on day 3 of the infusion and again after 15 and 30 days after PTA . On the basis of TcPO2 recorded during PGI2 infusion the patients were divided in two groups: group A (n=20) patients that during PGE1 infusions enriched TcPO2 values > 30 mmHg and group B (n=10) patients with TcPO2 values < 30 mmHg. Tab.1 TcPO2 values (mmHg)

GROUP	n.	basal	post PTA	During PGI2	+ 15 days	+ 30 days
A	(20)	9.1 ± 1.6	10.1 ± 2.4	36 ± 2.7*	46.3 ± 2.75*	47.9 ± 3.8*
B	(10)	7.8 ± 2.9	7.5 ± 4.48	5 ± 4.9	6.8 ± 2.55	5.5 ± 12

(*from B)

From the above data it is evident that when Tcpo2 values during PGI2 infusion increase significantly from the basal the values recorded at days 15 and 30 confirm a successful PTA while low TcpO2 values during PGI2 infusion are followed by low values also at days 15 and 30 days suggesting an ineffective PTA. In conclusion PGI2 infusion is able to early differentiate successful from unsuccessful lower limb PTA in diabetic patients.