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Transcutaneous carbon-dioxide, in Patients with POAD

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Transcutaneous oxygen ($TCPO_2$) and carbon dioxide ($TCPCO_2$) monitoring is an useful technique to monitor the tissue perfusion, especially to assess the skin necrosis risk in the patients with peripheral arterial disease.
While the $TcPO_2$ has been widely used for this aim, no recommendations have been suggested for the use of $TcPCO_2$.
In our observations we have found a significant increase of the $TcPCO_2$ in disabling claudication and in Critical Limb Ischaemia (CLI) than in "not disabling" claudication. More over no significant differences have been found in $TcPCO_2$ between severe claudication and CLI.

	Not Disabling Claudication	Disabling Claudication	CLI
$TcpO_2$	56 mmHg ± 12.03	25.7 mmHg ± 4.3*	5.7 mmHg ± 1.4*
$TcPCO_2$	58.9 mmHg ± 6.9	76.4 mmHg ± 20.7*	110.39 mmHg ± 36.3*
		← NS →	

* P< 0.0001

In conclusion our observations show that the metabolic pattern between severe claudication and critical limb ischaemia is strictly similar.
The levels of $TcpCO_2$ found in critical limb ischaemia suggest that the production of acidosis be related not only to the reduction of perfusion but also to the tissue metabolic pattern. Similar suggestion could be achieved in severe claudication, in which the increase of $TcPCO_2$ could be the sign of a significant worsening turn.
So the monitoring of the $TcPCO_2$ at the same time of the $TcPO_2$ could be helpful in the pharmacological treatment of CLI to indicate the responders from the not responder patients.
At the same time the $TcPCO_2$ monitoring could be an adequate tool to assess skin necrosis risk, in the definition of the level of amputation
At present for these suggestions more large studies are needed.