[O19] IS TRANSCUTANEOUS OXYGEN PRESSURE A SUITABLE MEASUREMENT METHOD FOR ASSESSMENT OF THE EFFECT OF CELL THERAPY ON CRITICAL LIMB ISCHEMIA IN DIABETIC PATIENTS?

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Background: Some patients with critical limb ischemia (CLI) could obtain therapeutic benefit from autologous cell therapy by the use of bone marrow-derived mononuclear cells. The main goal of cell therapy of CLI is improvement of limb ischemia, therefore transcutaneous oxygen pressure ($TcPO_2$) should be the main parameter evaluating the effect of this procedure. The aim of our study was to compare $TcPO_2$ values measured on the foot treated by cell therapy to the $TcPO_2$ changes on the contralateral foot and, also, to the reference spot on the clavicle.

Methods: Thirty-three diabetic patients with chronic CLI (defined by $TcPO_2$ before treatment < 30 mm Hg on the treated foot) undergoing autologous cell therapy in our centre between January 2008 and February 2015 and with both limbs assessed were included in the study. $TcPO_2$ was measured before and at 1, 3 and 6 months after the procedure. The reference measurement spot was on the clavicle.

Results: $TcPO_2$ increased significantly in the treated foot after 1, 3, and 6 months from 17.7 to 30.4 ($p < 0.01$), 39.9 ($p < 0.001$), and 42.2 mm Hg ($p < 0.001$), respectively. $TcPO_2$ values in the control limb were without significant changes after 1, 3, and 6 months (NS). The changes of $TcPO_2$ compared to baseline values between treated and control limbs were significantly different after 3 months (23.1 vs 4.2 mm Hg, $p = 0.0005$) and 6 months (29.4 vs 11.7 mm Hg, $p = 0.013$); the difference after 1 month was non-significant (12.1 vs 4.8 mm Hg, $p = 0.069$). Pearson´s chi-square test of improved/impaired values between both feet revealed a significant improvement of the treated foot compared to the control one ($p = 0.002$). The reference spot for $TcPO_2$ measurement on the clavicle was without significant changes at all measured intervals (56.3 ± 11.4, 57.5 ± 7.5, and 58.1 ± 9.5, NS) compared to baseline (56.1 ± 9.6). The foot/clavicle index from baseline to 3 months was significantly increased on the treated foot (from 0.33 to 0.71, $p < 0.001$), whereas the control limb was without a significant difference (from 0.67 to 0.65, NS).

Conclusion: Our study showed a significant increase of $TcPO_2$ on the treated limb with no-option CLI and no $TcPO_2$ changes on the contralateral limb or on the reference measurement spot. $TcPO_2$ proved to be a suitable method for assessing the effect of autologous cell therapy.

Supported by project (Ministry of Health, Czech Republic) for Development of Research Organization 00023001 (IKEM, Prague, Czech Republic) – Institutional support and by Grant Agency of Charles University in Prague, project no. 16415.