OXYGEN THERAPY FOR DIABETIC MACULAR ISCHEMIA: A Pilot Study.

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Abstract

PURPOSE: To evaluate the structural and functional effects of systemic oxygen therapy in patients with diabetic macular ischemia.

METHODS: This interventional case series was performed on 20 eyes from 13 consecutive diabetic patients with macular ischemia. For each patient, baseline optical coherence tomography and electroretinography were obtained before and after administration of 100% oxygen by face mask at a flow rate of 10 L/minute for 1 hour. Central macular thickness and b-wave amplitude were measured before and after oxygen therapy.

RESULTS: The patients included 9 women and 4 men with mean (SD) age of 63.38 (7.34) years. Central macular thickness decreased from 358.55 ± 96.27 μm before to 326.55 ± 84.11 μm after the oxygen therapy (P < 0.001). A reduction of >10% was observed in 55% of the eyes. In dark-adapted combined response electroretinography, the amplitude of b-wave increased from 227.76 ± 105.66 μV before to 264.35 ± 128.48 μV after the oxygen therapy (P < 0.001), representing a 16% increase. More than 10% increase in b-wave amplitude occurred in 60% of the eyes.

CONCLUSION: Oxygen therapy seems to have beneficial effects on the structural and functional changes of the retina in patients with diabetic macular ischemia. It may decrease central macular thickness and improve electrophysiologic function of the retina.

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