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Hyperbaric Oxygen Therapy Decreases QT Dispersion in Diabetic Patients.

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Diabetes mellitus is frequently associated with the malignant ventricular arrhythmias and sudden death. The QT dispersion is the difference between the longest and shortest QT interval calculated from the standard 12-lead electrocardiogram. The QT dispersion is suggested as an index of myocardial electrical activity. An increase in QT dispersion is associated with the malignant ventricular arrhythmias and sudden cardiac death. Diabetic patients receive hyperbaric oxygen (HBO) therapy for non-healing lower extremity ulcers. The aim of this study was to determine the effect of HBO therapy on QT dispersion in diabetic patients. Thirty diabetic patients (18 male and 12 female, 59.9 +/- 10 years), who were planning to undergo ten sessions of HBO therapy in two weeks for non-healing lower extremity ulcers, were consecutively enrolled into the study. The 12-lead resting electrocardiography recordings were taken before the first HBO therapy and after the 10th HBO-therapy session. QT intervals were measured on electrocardiogram. QT intervals were corrected for heart rate by using Bazett's formula (corrected QT [QTc] = QT/ radical R - R [seconds]). QTc dispersion was significantly decreased from 59.8 +/- 17.4 msec to 52.2 +/- 15.5 msec after ten sessions of HBO therapy (p < 0.05). However, maximum QTc, minimum QTc and mean QTc did not change significantly after HBO therapy. ***We have concluded that HBO therapy may reduce the risk of malignant ventricular arrhythmia and sudden cardiac death in diabetic patients when applied repetitively.***

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