

Factors influencing the outcome of lower-extremity diabetic ulcers treated with hyperbaric oxygen therapy.

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The objectives of this study were to report outcomes of a large number of patients receiving hyperbaric oxygen therapy (HBO(2)T) for diabetic lower-extremity ulcers, and to identify likely outcome predictors. Five hyperbaric facilities supplied data on 1,006 patients. A sixth clinic served as a validation sample for the regression-based prediction model, and later additional data from Memorial Hermann Hospital were added. The severity of lower-extremity lesions was assessed upon initiation of HBO(2)T using the Modified Wagner scale, and the outcome described as healed, partially healed, not improved, amputated, or died.

Overall, 73.8% of patients improved (granulated or healed). Factors significantly related to outcome included renal failure, pack-year smoking history, transcutaneous oximetry, number of HBO(2)T treatments, and interruption of treatment regimen. Number of treatments per week and treatment pressure (2.0 vs. 2.4 atmospheres absolute) were not significant factors in outcome. Concomitant administration of autologous growth factor gel did not improve outcome. A multiple regression model was fitted to the data that can be used to predict the outcome of diabetic patients undergoing HBO(2)T. Given the high cost of amputation and rehabilitation, these data suggest that hyperbaric oxygen treatment should be an important adjunctive therapy to heal lower-extremity lesions, especially those with a Wagner grade of 3 or higher.

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