Background/Aim: Hypoxia is an important factor in delayed wound healing. Oxygen delivery to tissues has shown accelerated wound healing. It has been shown to prevent infection, to play a role in epithelialization, collagen synthesis and angiogenesis. Moreover, it has been hypothesized that oxygen and reactive oxygen species (ROS) may play an important role as messengers in the inflammatory cascade. Our aim is to explore clinical efficacy in response to TCOT in Diabetic Foot Ulcers (DFUs).

Methods: A prospective randomized clinical trial was conducted to evaluate 12 subjects with chronic DFUs who received standard of care (SOC) with TCOT for 4-weeks as compared to those who received SOC alone. Patients were randomized to receive either treatment with topical oxygen or standard of care treatment during screen visit. Patients with critical limb ischemia as defined by and ABI < 0.6 or a TcPO2 < 30 mmHg, were excluded from the study. Patients were followed up weekly for the assessment of wound characteristics, and photo was taken during each visit.

Result: At week 4, Percent volume reduction (PVR) was calculated as 88% in the TCOT group and 52% in the control (P=0.09). We found a strong trend in healing between the two groups. The difference is 36% between the two groups, which suggests further evaluation of TCOT.

Conclusion: TCOT promotes healing of DFUs. A larger study is recommended (based on the observed results), to evaluate the significance of TCOT in treating DFUs.

REFERENCE: