

Topical Wound Oxygen therapy could be an adjunct to management of Ischaemic Diabetic Foot while awaiting definitive vascular intervention: A single centre case series

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BACKGROUND & AIM

Randomised controlled trials have demonstrated the benefit of at-home Topical Wound Oxygen (TWO₂®) therapy as an adjunct to standard of care (SOC) for diabetic foot ulcers.

The aim was to demonstrate the possible benefit of TWO₂ therapy as an adjunct in managing ischaemic foot ulcers.

PATIENT 1 | 67-year-old male

Infected and ischaemic right forefoot, enlarged abdominal aortic aneurysm, and triple vessel ischaemic heart disease.

Aneurysm stenting could not proceed until the foot ulceration had healed. At high anaesthetic risk for major surgery. Staged partial amputation of the 4th and 5th toes to control infection, then TWO₂ therapy (150 min, 3x weekly, 12 weeks) and trans-metatarsal amputation (TMA).

Controlled swelling and pain, with granulation of forefoot tissues. TMA preserved most of the foot.



Figure 2. Left to right: baseline, then 4, 8 and 12 weeks.

METHOD

Retrospective review of three cases with an acutely ischaemic foot who underwent TWO₂ therapy in addition to SOC while awaiting or undergoing vascular intervention.

PATIENT 2 | 62-year-old male

Ischaemic right forefoot with significant rest pain.

Recurrent blocked bypass surgery to the foot.

TWO₂ therapy started while awaiting redo-bypass.

Improved rest pain and forefoot TcpO₂ on initiating TWO₂ therapy. This bridged the gap until redo-bypass and toe amputation.



Figure 3. Left to right: baseline, therapy in progress, and 6 weeks.

TWO₂ THERAPY

Cyclical pressurised topical oxygen delivered to the affected limb, alongside SOC.

Figure 1. TWO₂ therapy in the single-use chamber.



PATIENT 3 | 55-year-old male

Pre-existing right above-knee amputation and left foot TMA, with a non-healing forefoot ulcer.

Angioplasty to the right superficial femoral artery was successful, but the anterior tibial artery disease could not be treated.

TWO₂ therapy started after revascularisation.

Improved skin texture, with the wound progressing to near full closure after 12 weeks of TWO₂ therapy.



Figure 4. Left to right: two baseline views, then 6 and 12 weeks.

CONCLUSION

There is scope to use TWO₂ therapy as an adjunct to SOC in the complex ischaemic diabetic foot, in both pre- and post-revascularisation or pre-amputation, with potential to improve skin quality and swelling.

OBSERVED EFFECTS OF TWO₂ THERAPY

- ✓ Controlled swelling
- ✓ Controlled pain
- ✓ Better granulation tissue
- ✓ Thicker new skin formation
- ✓ Better skin texture
- ✓ Improved wound healing
- ✓ Good patient engagement