WOUND HEALING AND OUTCOME | DIABETIC FOOT STUDY GROUP 2026 · LIMB SALVAGE

Early Experience Delivering In-Hospital Topical Wound Oxygen Therapy in Complex Diabetic Foot Wounds as Part of a Multimodal Limb-Salvage Algorithm

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80%
Complete wound healing
4 of 5 patients

100%
Limb preservation
5 of 5 patients

0
Amputations
No minor, no major

0
TWOT-related adverse events
Regimen tolerated by all

AIM

Complex diabetic foot wounds remain a major challenge in limb preservation. Topical Wound Oxygen Therapy (TWOT) is an evidence-based adjunct for selected hard-to-heal lower-limb wounds, supported by IWGDF guidance and NICE.[1,2] We assessed the feasibility, safety and clinical outcomes of delivering TWOT in-hospital within a specialist limb-salvage pathway.

METHOD

Retrospective service evaluation of five consecutive complex lower-limb wound cases receiving TWOT, delivered **twice daily for 90 minutes** alongside standard multidisciplinary care.

THE LIMB-SALVAGE ALGORITHM

01	**Vascular optimisation**	2/5 revascularised
02	**Infection control**	2/5 osteomyelitis
03	**Wound debridement**	5/5 selective
04	**Offloading and Metabolic**	5/5
05	**TWOT adjuvant**	90 min, twice daily

TABLE 1 · BASELINE

Patients treated, n	**5**
Age, mean (range)	**58.2 (34–79)**
Male / female, n	**3 / 2**
Type 2 diabetes, n (%)	**4 (80%)**
Non-diabetic, n (%)	**1 (20%)**
HbA1c (mmol/mol)	**45–64**
CKD stage ≥3, n (%)	**2 (40%)**
Peripheral arterial disease, n (%)	**2 (40%)**
Revascularisation, n (%)	**2 (40%)**
Osteomyelitis, n (%)	**2 (40%)**
Charcot neuroarthropathy, n (%)	**1 (20%)**
Peripheral neuropathy, n (%)	**3 (60%)**
WIfI classification ≥3, n (%)	**2 (40%)**
Surgical debridement, n (%)	**2 (40%)**
Offloading provided, n (%)	**5 (100%)**

Wound location: leg 2 (40%), forefoot 2 (40%), hindfoot 1 (20%).

TABLE 2 · OUTCOMES

Fully healed wounds, n (%)	**4 (80%)**
Ongoing management, n (%)	**1 (20%)**
Limb preservation, n (%)	**5 (100%)**
Minor amputations, n	**0**
Major amputations, n	**0**
TWOT-related adverse events, n	**0**
Healing time, median (range)	**44 d (28–128)**

The transferred patient had 100% granulation tissue coverage and was infection-free and gangrene-free at transfer.

STAGED CHARCOT CASE

Same patient, two surgical stages — a within-patient comparison.

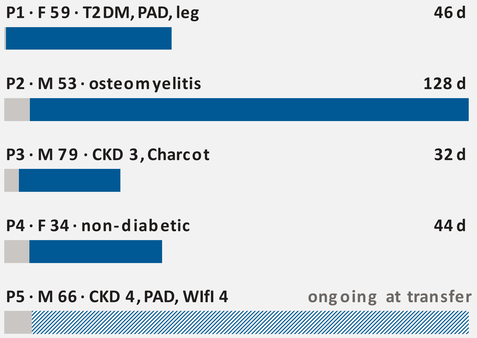
Stage 1 — standard care **30 days**

Stage 2 — with TWOT **21 days**

≈30% shorter time to closure

INDIVIDUAL COURSES

Days from admission or reconstruction to wound closure; red marks the period on TWOT.



Healing was achieved across diverse wound phenotypes — post-debridement open wounds and long post-reconstruction sutured wound areas alike. Staff and patients adapted readily to the twice-daily regimen.

WOUND PROGRESSION

P1 · Hard-to-heal leg wound
F 59 · T2DM · PAD, revascularised



Before — open wound, sloughy base



After — contracted, epithelialising

P2 · Complex diabetic foot wound
M 53 · T2DM · osteomyelitis,



Before — post-debridement



After — closed wound, limb preserved

CONCLUSION

TWOT was safely delivered as an adjuvant to multidisciplinary limb-salvage care. Healing outcomes, complete limb preservation and the absence of treatment-related adverse events support further evaluation in larger prospective studies. Findings are consistent with the TWO2 randomised trial [3] and with continuous topical oxygen delivery data. [4]

KEY MESSAGE

TWOT was successfully integrated into an inpatient multidisciplinary limb-salvage pathway, achieving 100% limb preservation with no treatment-related adverse events.

REFERENCES

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