Clostridial Myonecrosis (Gas Gangrene)

START AS SOON AS POSSIBLE — and never before or instead of surgery

An adjunct to immediate surgical debridement and antibiotics in fulminant clostridial myonecrosis — never a substitute, and never a reason to delay the operation.

TREATMENT PROTOCOL

Pressure	**3.0 ATA** (304 kPa). Consider 2.5 ATA with shortened oxygen periods only if CNS oxygen toxicity forces it
Duration	90 min
Frequency	**2–3 times in the first 24 h**, then twice daily for the next 2–5 days
Sessions	Not fixed — extend the profile if the patient remains toxic
Review	After 10 treatments

PATIENT SELECTION

Who to treat	Confirmed or suspected *Clostridium perfringens* or related myonecrosis, as one arm of the surgery, antibiotics and hyperbaric oxygen triad.
Who not to treat, or when to stop	**Initial surgery (opening and debridement) is primary and time-critical.** Hyperbaric treatment must not delay it. Lengthy excision can wait; debride between sessions once demarcated.
Mechanism	Hyperoxia is directly bacteriostatic and bactericidal to the anaerobe, halts alpha-toxin production, and demarcates non-viable tissue so that less has to be debrided.
Outcome measure	Mortality; systemic toxicity; extent of spread and of debridement. Target tissue partial pressures above 300 mmHg.

WHAT THE NUMBERS SHOW

- **Korhonen 1999** (n=53): mortality **22.6%**, with hyperbaric treatment reported as reducing systemic toxicity and preventing spread.
- **Hart 1983** (n=139, collective review and series): **81% survival** with the full triad.
- **Slack 1969** (n=40, monoplace): 9 of 32 clostridial patients died (13 of 40 overall), none from the clostridial infection itself.
- **Yang 2015 Cochrane**: only two small very-low-quality RCTs (n=90 total) exist, **neither of them comparing hyperbaric oxygen against no hyperbaric oxygen**. Efficacy could not be determined.

EVIDENCE BASE

Shape and certainty	Entirely observational — a randomised trial is not feasible in a fulminant lethal emergency. Cochrane searched for a hyperbaric-versus-no-hyperbaric trial and found none.

Study	Design	Result and risk of bias
Korhonen 1999, Ann Chir Gynaecol — PMID 10392252	Case series, n=53	Positive; descriptive, no comparator
Hart 1983, J Trauma — PMID 6355502	Collective review + series, n=139	Uncontrolled; no concurrent comparator
Slack 1969, Br J Surg — PMID 5815868	Case series, n=40	Mixed; less effective in non-clostridial mimics
Yang 2015, Cochrane — PMID 26631369	Systematic review	Inconclusive — no eligible trial

WHAT THE EVIDENCE DOES NOT SUPPORT

Cautions	No randomised trial of hyperbaric oxygen against no hyperbaric oxygen exists, so no trial-level claim can be made. A murine model (Stevens 1993) found hyperbaric oxygen **ineffective alone**, additive only early with penicillin or metronidazole, and of no added value with clindamycin — which reinforces the adjunct-only framing.

STATUS AND SOCIETY POSITIONS

Status	Accepted indication in South Africa (SAUHMA Level C, adjunctive). Its PMB diagnosis-treatment pair is **the only one in the entire CMS coded list that names hyperbaric oxygen explicitly** in its statutory treatment column.
ICD-10 (SA)	A48.0, B96.7
ECHM 2017 (Type, Level)	Anaerobic and mixed infections 1C

Compiled from the **UHMS Hyperbaric Oxygen Therapy Indications Manual, 15th edition (2023)** and the appraised trial evidence held in an HBOT evidence library. All treatments are 100% oxygen. US Navy Treatment Table profiles are named, not reproduced — the US Navy Diving Manual is the operative document at the chamber. Session counts are largely guideline convention rather than dose-finding evidence. This card summarises published parameters and does not replace those source documents or clinical judgement for the individual patient. Generated 28 October 2026. Not a SAUHMA publication and carries no society endorsement.