

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 <i>Clostridium perfringens</i> 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.
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STATUS IN SOUTH AFRICA

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.
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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 03 October 2026. Not a SAUHMA publication and carries no society endorsement.