

# The role of continuous Topical Oxygen Therapy (cTOT) as an adjunctive treatment in non-healing chronic wounds; A South African perspective

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## Introduction

Continuous Topical Oxygen Therapy (cTOT) is becoming increasingly recognized as a useful adjunct to good standard of care in non-healing chronic wounds.<sup>1</sup> Compelling evidence supporting the impact of cTOT on wound progression, healing and pain management is reported in primary research<sup>2,3</sup> and in various recent meta-analysis.<sup>4-6</sup> In practice, cTOT is advocated in wounds with less than 40-50% healing in 4 weeks,<sup>1</sup> helping patients and their carers heal wounds faster.

In this case series, the impact of cTOT as an adjunct to routine standard of care (SoC) was investigated in several patients with hard to heal wounds at a Wound Management Centre in Pretoria, South Africa

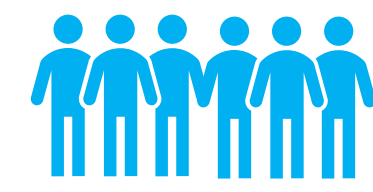
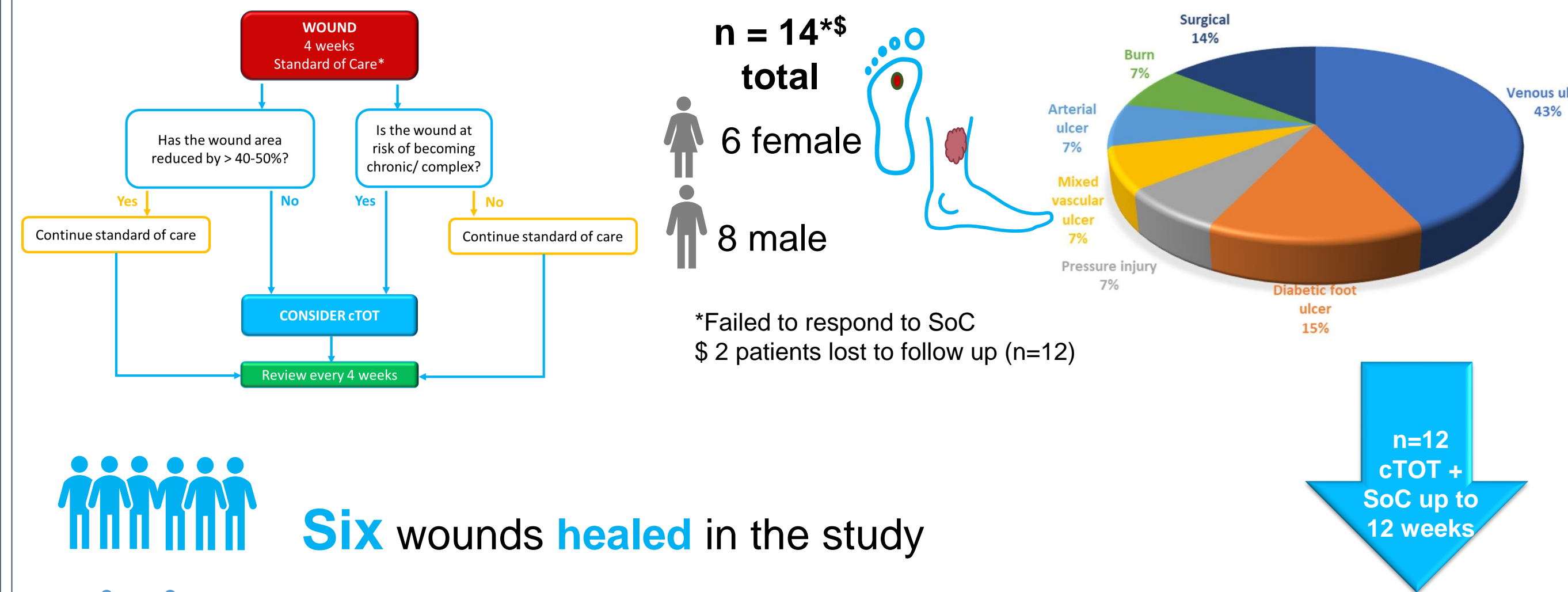
## Methods

14 patients with non-healing wounds of duration >30 days were managed with SoC<sup>§</sup> + adjunctive cTOT. Patients with any active untreated infection or osteomyelitis were excluded.

Following informed consent, patient, baseline routine wound and pain assessments (Visual Analogue Scale, VAS) were performed. The cTOT system\* was applied to the wound and covered with an appropriate secondary dressing. Wound assessments/ dressing changes were performed weekly for 12 weeks or until healing was achieved.

\*cTOT device tested was NATROX<sup>®</sup> O<sub>2</sub> Wound Therapy, §SoC = Standard of care appropriate for that wound

## Results



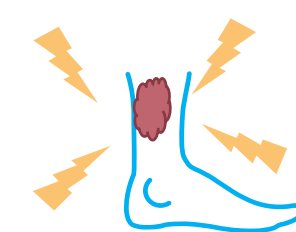
**Six wounds healed** in the study



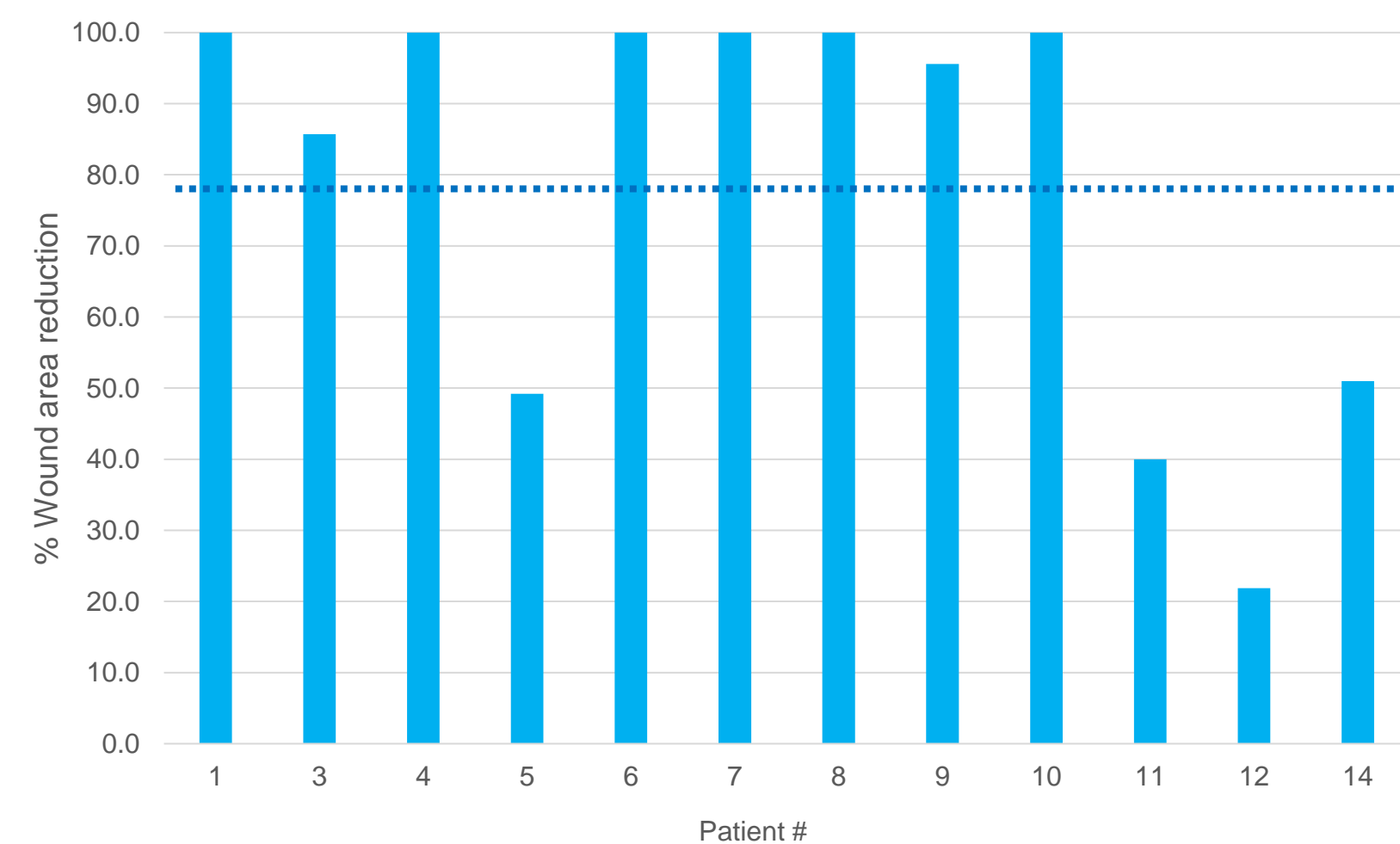
Mean time to healing = **11.7 weeks**



**Reduction in wound area** demonstrated in all **12** wounds



Pain score reduction **5/6** wounds by mean 3.6 (VAS)



**78.6%** mean wound area reduction over the study

**Figure 1.** Percentage Wound Area Reduction (PWAR) compared to baseline (n=12), blue dotted line = mean PWAR of 78.6%

## Case examples

**Patient 1**  
Complicated Diabetic Foot ulcer on forefoot with history of underlying osteomyelitis and amputation of 2<sup>nd</sup> toe.

Wound duration 3 months\*

**Patient 4**  
Complicated Charcot Diabetic Foot ulcer plantar. No underlying osteomyelitis present.

Wound duration 12 months\*

**Patient 6**  
Complicated full thickness burn on right thigh. cTOT applied during Proliferation phase on main ulcer.

Wound duration 3 months\*

**Patient 8**  
Quadriplegic patient - multiple pressure ulcers due to defective equipment during loadshedding in SA. Sacral pressure ulcer Stage 3

Wound duration 2 months\*

\* Wound duration prior to cTOT

Routine SoC + cTOT initiated

Week 1	Week 6	Week 12 cTOT stopped week 9 Patient continued home care with silicone foam	<b>HEALED 14 weeks</b>
Week 1	Week 6	Week 17 cTOT stopped week 14	<b>HEALED 17 weeks</b> and still intact at home
Week 1	Week 6 cTOT therapy discontinued	<b>HEALED Week 12</b> Site had better, softer quality scarring present.	
Week 1	Week 4	Week 8 cTOT therapy discontinued week 9	<b>HEALED Week 12</b> Patient continued with pressure care

## Discussion

Topical Oxygen Therapy use is endorsed and recommended by international expert guidance including the IWGDF, WHS and the ADA.<sup>7-9</sup> with potential benefits highlighted across any non-healing wound<sup>1,10,11</sup>

cTOT proved a useful adjunct to help promote wound healing and reduce pain in these challenging wounds in South Africa, highlighting the benefit that access to this therapy may bring to patients in the region with non-healing chronic wounds.

## References

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