

Prevention of Pressure Injuries in an Extensive Thermal Burns Patient Using Sanyrene®

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Abstract

Prolonged immobility in severe burn patients predisposes them to pressure injuries, which can complicate recovery and increase morbidity. We report the use of Sanyrene®, a hyperoxygenated fatty acid skin care oil, in preventing pressure injuries in a 46-year-old male with 50% total body surface area thermal burns who was admitted and treated in ICU for two months. The oil was applied twice daily over pressure-prone areas in conjunction with standard preventive care. No pressure injuries developed during hospital stay. The outcome supports existing evidence that Sanyrene®, as part of a comprehensive prevention strategy, enhances skin oxygenation, maintains barrier integrity, and effectively prevents pressure injuries in high-risk immobile patients.

Keywords: yasser's squaring saddling syndrome; partial modified yasser's wpw syndrome; yasser's lateral halo sign; silent infarction; heart block; craniofacial hyperhidrosis; organophosphorus; covid-pneumonia

Introduction

Pressure injuries are defined as localized damage to the skin and underlying tissue, usually over a bony prominence, resulting from prolonged pressure, friction, or shear. They remain a major concern in hospitalized, immobile patients- especially those with extensive burns requiring prolonged bed rest.

The global prevalence of pressure injuries is estimated at 12.8% among hospitalized adults, with the sacrum and heels being the most affected sites. [1] Pressure injuries not only increase healthcare costs but also prolong hospital stay and negatively impact quality of life. [2]

Sanyrene® (Laboratoires Uрго, France) is a topical emollient composed of 99% maize oil enriched in hyperoxygenated fatty acids. It improves local skin oxygenation and elasticity, reduces friction and shear, and helps maintain hydration. [3,4] Sanyrene contains other ingredients apart from hyperoxygenated essential fatty acid linoleic acid, vitamin E, palmitic acid, stearic acid and 1% anise perfume.⁵ Clinical studies have demonstrated that Sanyrene®, when added to standard preventive

protocols, reduces pressure injury incidence by 40% compared with conventional care. [6,7]

This case report describes the preventive role of Sanyrene® in a bedridden patient with 50% TBSA thermal burns.

Materials and Methods

A 46-year-old male sustained 50% mixed-depth thermal burns over the head and neck, chest, abdomen, back and bilateral upper limbs and bilateral thighs following a suicidal flame injury. He required immediate prolonged resuscitation alongwith multiple excision and skin grafting procedures and prolonged immobilization for graft take and healing. The total period of restricted mobility was approximately two months.

To prevent the development of pressure sores in the patient a comprehensive pressure injury prevention protocol was followed, including regular repositioning every two hours, use of alternating-pressure air mattress, maintenance of optimal nutrition and hydration and twice-daily skin inspection by medical personnel. As an adjunct,

Sanyrene® was applied twice daily to intact skin over bony prominences — sacrum, heels, elbows, and scapulae. The oil was sprayed and gently

spread using sterile gloves, avoiding friction or massage, in accordance with manufacturer guidelines (Figure1).



Figure 1: Application of Sanyrene oil in Burns patient pressure areas

Monitoring continued throughout hospitalization for early signs of erythema, induration, or skin breakdown.

Results

During the two-month immobilization period, the patient exhibited no evidence of pressure injury at any anatomical site. The skin remained supple, hydrated, and intact throughout her recovery. No adverse reactions such as rash, irritation, or allergic response were noted. The patient's overall comfort and skin condition improved compared to baseline.

Discussion

Burn patients are inherently predisposed to pressure injuries due to immobilization, altered skin perfusion, increased metabolic demand, and impaired tissue oxygenation. The combination of systemic catabolic stress, fluid imbalance, and compromised skin integrity following burns contributes to ischemia and delayed healing. Traditional preventive strategies such as pressure redistribution, frequent repositioning, and adequate nutritional support remain the cornerstone of pressure injury prevention; however, these methods may not fully address the microvascular compromise **and** epidermal barrier dysfunction that occur in such patients. [1,2]

Sanyrene®, a hyperoxygenated fatty acid ester (HOFA) oil, has demonstrated substantial efficacy in maintaining cutaneous oxygenation, hydration, and elasticity, thereby offering a physiological approach to pressure sore prevention. Colin et al. first reported improved transcutaneous oxygen pressure (TcPO₂) under compressive conditions following Sanyrene® application, indicating enhanced local perfusion³. **Gallart et al.** and **Meaume et al.** subsequently confirmed these findings in randomized controlled trials, demonstrating a **significant reduction in pressure injury incidence** when sanyrene® was used in conjunction with standard preventive care — from **35% to 19%** in hospitalized patients and an overall **40% lower risk** among elderly immobile populations [4,6].

Further evidence from **Dang et al.** supports Sanyrene®'s versatility, showing its success not only in perioperative and geriatric patients but also in **preventing device-related facial injuries** among healthcare

workers during the COVID-19 pandemic⁵. It can be combined with other silver dressings or silicon sheet application for better results.⁷ This aligns with recent understanding that maintaining **microcirculatory oxygenation and optimal stratum corneum hydration** are critical in reducing friction and shear-related injury [8].

Additionally, updated international clinical guidelines emphasize **individualized skin care** and the use of **protective topical agents** for high-risk patients. According to **Kottner et al.**, integrating evidence-based adjuncts such as HOFA preparations into prevention protocols complements mechanical offloading and enhances patient outcomes. Sanyrene® meets these recommendations through its dual mechanism of **improving tissue oxygen availability** and **stabilizing epidermal lipid structure**, which supports barrier restoration and resistance to shear stress. [9]

In the present case, the use of Sanyrene® successfully prevented any occurrence of pressure injury during a two-month period of immobilization in a burn patient—a scenario with exceptionally high-pressure injury risk. This observation reinforces its clinical utility as a **safe, cost-effective, and easily applicable adjunct** that fits well into multidisciplinary burn rehabilitation care. Its **simplicity, tolerability, and compatibility** with standard preventive strategies make it a valuable addition to modern pressure injury prevention protocols.

Conclusion

The use of Sanyrene®, along with evidence-based standard care, effectively prevented pressure injuries in a patient on prolonged immobilisation following extensive thermal burns. Its mechanism of enhancing oxygenation, maintaining skin integrity, and minimizing friction makes it an excellent adjunct in pressure injury prevention for high-risk patients. Incorporating Sanyrene® into standard burn care protocols can improve patient outcomes, reduce nursing workload, and

enhance quality of life. But standardisation requires large sample size study

References

1. Li Z, Lin F, Thalib L, Chaboyer W. (2020). Global prevalence and incidence of pressure injuries in hospitalised adult patients: A systematic review and meta-analysis. *Int J Nurs Stud.* 105:103546.
2. Mehta C, George JV, Mehta Y, Wangmo N. (2015). Pressure ulcer and patient characteristics-A point prevalence study in a tertiary hospital of India based on the European Pressure Ulcer Advisory Panel minimum data set. *J Tissue Viability.* 24(3):123-130.
3. Colin D, Chomard D, Bois C, et al. (1998). An evaluation of hyperoxygenated fatty acid esters in pressure sore management. *J Wound Care.* 7(2):71-72.
4. Gallart E, Fuentelsaz C, Vivas G, et al. (2001). Experimental study to test the effectiveness of hyperoxygenated fatty acids in the prevention of pressure sores in hospitalized patients. *Enfermería Clínica.* 11(5):179-183.
5. Dang VT, Zhu J, Wang J, Sanmugam K, Zhang S, Quang TX. (2023). Prevention of pressure injuries/ulcers and skin lesions using Sanyrene®: a narrative review of the evidence. *Wounds Asia.* 6(2):8-17.
6. Meaume S, Colin D, Barrois B, et al. (2005). Preventing the occurrence of pressure ulceration in hospitalised elderly patients. *J Wound Care.* 14(2):78-82.
7. Huang M, Zhu Y, Zhang Q. (2021). Effect of Sanyrene combined with Mepilex Border in prevention of pressure injuries in the perioperative period of spinal surgery. *Chin J Integr Nurs.* 7(6):71-74.
8. Proksch E, Berardesca E, Misery L, et al. (2020). Dry skin management: practical approach in light of latest research on skin structure and function. *J Dermatol Treat.* 31(7):716-722.
9. Kottner J, Cuddigan J, Carville K, et al. (2019). Prevention and treatment of pressure ulcers/injuries: The protocol for the second update of the International Clinical Practice Guideline. *J Tissue Viability.* 28(2):51-58.



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