



Case Series

Case Series on the Clinical Benefit of a Self-Nano Emulsifying Curcumin Formulation (SNEC 30) in Oral Ulcerative Conditions

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Abstract

Background: Oral ulcerative conditions, including inflammatory lesions and chemical-induced mucosal injuries, significantly impair patient quality of life. Geographic tongue (benign migratory glossitis) and chemical-induced oral ulcers represent clinically challenging conditions with limited targeted pharmacotherapy. Curcumin, the principal bioactive polyphenol of *Curcuma longa*, has demonstrated anti-inflammatory, antioxidant, antimicrobial and wound-healing properties.

Objective: To describe the clinical outcomes associated with a self-nano emulsifying curcumin formulation (SNEC 30) in two patients presenting with distinct oral ulcerative conditions.

Case Presentation: Case 1 involved a patient with geographic tongue treated with SNEC 30 capsules and SNEC 30 curcumin gargle for 15 days, demonstrating near-complete resolution of erythematous depapillated lesions and high patient satisfaction. Case 2 involved a patient with extensive chemical-induced oral ulceration following accidental acid ingestion, treated with SNEC 30 capsules, SNEC 30 gargle and SNEC-G oral gel, resulting in progressive mucosal healing within five days.

Conclusion: This case series provides preliminary clinical evidence supporting SNEC 30 as a curcumin-based adjunct therapy for oral ulcerative conditions. Rapid healing and favourable tolerability observed in these cases warrant further investigation in prospective controlled clinical studies.

Keywords: Curcumin; Oral ulcer; Geographic tongue; SNEC 30; Self-nano emulsifying curcumin; Oral mucositis; Benign migratory glossitis; Wound healing

Introduction

Oral mucosal diseases collectively affect an estimated 3.5 billion people worldwide and constitute a significant burden on global oral health [1]. Among these, oral ulcerative conditions range from benign self-limiting aphthous lesions to severe chemically or immunologically mediated ulcerations that can profoundly impair

mastication, speech, and nutrition. Conventional management strategies, including topical corticosteroids, analgesics, and antiseptic rinses, often provide only symptomatic relief and are associated with limitations in long-term tolerability and efficacy [2].

Geographic tongue (benign migratory glossitis) is a chronic inflammatory condition of the tongue characterized by multifocal, erythematous, depapillated patches with irregular margins that migrate over time. Its etiology remains incompletely understood,

with proposed associations including immune dysregulation, atopy, and local inflammatory triggers. Symptoms range from asymptomatic to marked burning sensation and oral discomfort [3].

Chemical-induced oral ulcers, conversely, represent an acute form of mucositis arising from direct corrosive injury to the mucosal epithelium. Such injuries are associated with extensive tissue necrosis, marked inflammation, and a heightened risk of secondary bacterial superinfection, necessitating prompt wound-healing support [4].

Curcuma longa (turmeric) has been recognized in Ayurvedic and traditional medicine for millennia for its broad therapeutic properties. Its principal polyphenolic constituent, curcumin (diferuloylmethane), exerts clinically relevant anti-inflammatory activity through inhibition of nuclear factor-kappa B (NF- κ B) and cyclooxygenase-2 (COX-2) pathways, in addition to antioxidant, antimicrobial, and pro-regenerative effects [5,6]. Curcumin's application in the management of oral mucosal diseases including aphthous stomatitis, oral lichen planus, oral submucous fibrosis, and mucositis has been documented in several clinical studies [7].

A key limitation of conventional curcumin formulations is their inherently poor aqueous solubility and low oral bioavailability. SNEC 30 (Self-Nano Emulsifying Curcumin; 30 mg per capsule) employs a patented self-nano emulsifying drug delivery system (SNEDDS) that enhances curcumin solubilization and systemic absorption, potentially amplifying its therapeutic effects in inflammatory and ulcerative conditions [8]. The SNEC product range also includes a curcumin-based gargle and an oral gel formulation designed for topical mucosal application.

This case series reports the clinical outcomes of two patients with oral ulcerative conditions treated with SNEC 30-based curcumin therapy under the care of a dental surgeon in West Bengal, India, and discusses the putative mechanisms underlying the observed responses.

Case Presentation

Case 1: Geographic Tongue (Benign Migratory Glossitis) (Figure 1).

Patient Profile: An adult patient presented with burning sensation

and irregular patches on the dorsal tongue surface.

Clinical Findings: Multifocal erythematous depapillated patches with serpiginous borders were observed on the dorsum of the tongue.

Treatment Protocol: SNEC 30 capsules (curcumin 30 mg SNEDDS formulation) orally three times daily along with SNEC 30 curcumin gargle twice daily for 15 days.

Outcome: At Day 15, marked clinical improvement and near resolution of lesions were observed.



Figure 1: Geographic tongue before and after treatment.

Case 2: Chemical-Induced Oral Ulceration (Figure 2).

Patient Profile: An adult male presented with extensive oral mucosal injury following accidental ingestion of an acidic substance.

Clinical Findings: Confluent ulcerations involving the labial mucosa, buccal mucosa and floor of mouth with necrotic base and surrounding inflammation.

Treatment Protocol:

- SNEC 30 capsules (oral systemic therapy)
- SNEC 30 curcumin gargle
- SNEC-G oral gel for topical application

Treatment duration: 5 days.

Outcome: Rapid mucosal healing with near-complete epithelialization by Day 5.



Figure 2: Sequential healing of chemical-induced oral ulcers.

Discussion

This case series provides preliminary clinical evidence for the potential therapeutic role of a self-nano emulsifying curcumin formulation (SNEC 30) in two distinct oral ulcerative conditions: geographic tongue and chemical-induced oral mucositis. The observed outcomes near-complete mucosal resolution within 5-15 days are noteworthy and merit mechanistic consideration within the existing body of curcumin pharmacology literature.

Curcumin's anti-inflammatory activity is principally mediated through inhibition of the NF- κ B transcription pathway, suppressing downstream pro-inflammatory cytokines including tumour necrosis factor- α (TNF- α), interleukin-1 β (IL-1 β), and interleukin-6 (IL-6), as well as COX-2-mediated prostaglandin synthesis [5]. In geographic tongue, where local immune dysregulation and inflammatory cell infiltration underpin the characteristic depapillation, this cytokine-suppressive activity may contribute to mucosal stabilization and symptomatic relief. Published clinical data support curcumin's comparability to topical corticosteroids in reducing pain and promoting healing in recurrent aphthous stomatitis, a condition with overlapping inflammatory pathophysiology [7].

In the context of chemical-induced oral ulceration, curcumin's mechanisms of benefit are multifaceted. In addition to anti-inflammatory activity, curcumin has demonstrated antioxidant properties that reduce reactive oxygen species (ROS)-mediated

tissue damage at wound sites, and promotes epithelial regeneration through upregulation of transforming growth factor- β (TGF- β) and enhanced collagen synthesis [9]. Curcumin's well-documented antimicrobial activity against common oral pathogens further reduces the risk of secondary infection at denuded mucosal surfaces, potentially accelerating the healing trajectory observed in Case 2 [10].

The use of SNEC 30 specifically, rather than conventional curcumin preparations, is pharmacologically relevant. Conventional curcumin suffers from low aqueous solubility and poor gastrointestinal absorption, resulting in limited systemic bioavailability. The self-nano emulsifying drug delivery system employed in SNEC 30 generates nano-emulsion droplets upon contact with gastrointestinal fluids, enhancing curcumin solubilisation and absorption and amplifying systemic anti-inflammatory concentrations [8]. The complementary topical formulations gargle and oral gel provide direct mucosal delivery, achieving local therapeutic concentrations at the site of injury, particularly important for the extensive ulceration seen in Case 2.

It is important to acknowledge the inherent limitations of this case series. Observational reports without control arms cannot establish causality or exclude spontaneous resolution, placebo effect, or the contribution of concomitant medications (notably cefaclor and ibuprofen noted in the prescription for Case 1). Patient demographic details, including age, sex, and comprehensive medical history, are incompletely documented. Standardized wound assessment instruments (e.g., validated ulcer size scales, pain visual analogue scores) were not formally applied. Nevertheless, the consistent photographic evidence of healing across two clinically disparate conditions, the plausible mechanistic basis, and the established safety profile of curcumin collectively support the observations reported here as a meaningful contribution to the emerging literature on curcumin in oral mucosal disease.

Conclusion

This case series demonstrates promising clinical outcomes following administration of SNEC 30 (self-nano emulsifying curcumin formulation), used alongside complementary topical curcumin products, in two patients presenting with oral ulcerative conditions of differing etiology. Rapid, well-tolerated healing was observed in both geographic tongue and severe chemical-induced oral ulceration. These preliminary findings support the potential of bioavailability-enhanced curcumin as an adjunctive therapy in oral mucosal disease. Prospective randomized controlled trials with standardized outcome measures are warranted to establish efficacy, optimal dosing protocols, and long-term safety in these patient populations.

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Declarations

Ethics Approval and Consent to Participate

Clinical observations were recorded during routine dental care. Patient consent for use of clinical data and images for academic publication was obtained.

Consent for Publication

Written informed consent for publication of clinical details and images was obtained from the patient.

Availability of Data and Materials

All relevant clinical information supporting the findings of this case series is included within the manuscript.

Conflict of Interest

The authors declare no competing interests.

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