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## ORAL AND SYSTEMIC SIDE EFFECTS OF CANCER CHEMOTHERAPY AND EFFECT OF BENZYDAMINE MOUTHWASH IN ORAL MUCOSITIS

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### ABSTRACT

#### Keywords:

Oral mucositis,  
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oral rinse

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**Aim:** To check the effectiveness of 0.15% Benzylamine hydrochloride on oral mucositis secondary to cancer chemotherapy

**Methods:** In the past few years, multiple cases were referred to our department for the management of oral manifestations of cancer chemotherapy for various malignancies. Out of these patients, we selected 5 patients and used a simple, inexpensive treatment modality in consideration with patient's affordability and convenience. They were prescribed 0.15% Benzylamine hydrochloride oral rinse (Tantum) for the relief of oral discomfort.

**Results:** Significant reduction in oral mucositis and discomfort was observed after a week. The treatment was continued for 3 weeks till complete disappearance of oral ulcers.

**Conclusion:** Benzylamine oral rinse is simple, effective, safe, inexpensive and well tolerated therapeutic modality for prophylactic and palliative treatment of chemotherapy-induced oral mucositis. It holds a special significance in the developing countries such as India for the lower socioeconomic strata.

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**INTRODUCTION:** High-dose chemotherapy or high-risk cytotoxic drug based protocols (Fluorouracil, Methotrexate, Melphalan)<sup>1</sup> cause high toxicity. The percentage of oral mucositis can go upto 90%<sup>2</sup> in these cases. The common manifestations are widespread areas of painful inflammation, erythema, aphthous-like stomatitis and multiple ulcerations<sup>3</sup>. It has important effects on morbidity, daily functions, economic factors, treatment compliance and treatment results<sup>4</sup>.

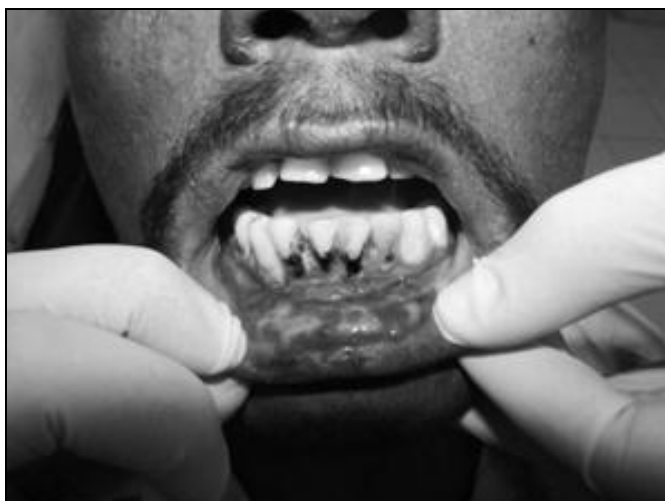
Systemic manifestations like skin reactions, blood dyscrasias are also common. Till date no conventional or advanced therapeutic method is established as completely universal and effective for oral mucositis.

In the past few years, multiple cases were referred to our department for the management of oral manifestations of cancer chemotherapy for various malignancies. On systemic examination of these

patients signs including pallor of the lower palpebral conjunctiva, maculopapular rash on the trunk and extremities, alopecia and loss of hair from the eyebrows were observed. Anemia and leukopenia were detected on haematological investigations as a part of myelosuppression. Intraorally, erythema, painful ulcerations on bilateral buccal mucosae, lower labial mucosa, lateral borders of the tongue and hard palate were seen with depapillation of the tongue and the patients complained of difficulty in wide mouth opening, speaking, burning sensation and pain during mastication. Angular cheilitis was also noted bilaterally.

Out of these patients, we selected 5 patients and used a simple, inexpensive treatment modality in consideration with patient's affordability and convenience. They were prescribed 0.15% Benzylamine hydrochloride oral rinse (Tantum) for the relief of oral discomfort. They were advised to take 10ml in the oral cavity, keep it in contact with the mucosa for 30 seconds and then spit it out, 3-4 times a day 1 hour prior to meals. Along with this protocol, they were also referred to the oncologist for other ailments. The patients were followed up after every 4 days.

Significant reduction in oral mucositis and discomfort was observed after a week. The treatment was continued for 3 weeks till complete disappearance of oral ulcers. We provide the pre-treatment (**fig. 1**) and post-treatment photograph (**fig. 2**) of such a case treated with Benzylamine HCl.



**FIG. 1: EXTENSIVE ERYTHEMA AND ULCERATIONS ON THE LOWER LABIAL MUCOSA**



**FIG. 2: SIGNIFICANT REDUCTION IN THE REDNESS AND ULCERATIONS ON THE LOWER LABIAL MUCOSA AFTER THE USE OF 0.15% BENZYLAMINE HYDROCHLORIDE ORAL RINSE**

Benzylamine hydrochloride is a nonsteroidal drug having topical anti-inflammatory, analgesic, anesthetic, and antimicrobial activities<sup>5</sup>. Topically, it attenuates a variety of inflammatory conditions including oral mucositis induced by antineoplastic radiation or chemotherapy<sup>6</sup>.

It affects prostaglandin and thromboxane production, reduces pro-inflammatory cytokine production by macrophages and stabilises cell membranes<sup>7</sup>. It also provides an antifungal effect<sup>8</sup>. There are no contraindications to the use of Benzylamine except for known hypersensitivity. Problems of tissue breakdown, secondary infection (primarily candidal) or impaired healing are not dealt by other palliative regimens like topical anaesthetics or anti-inflammatory drugs, agents such as colloidal silver solutions, salt and soda rinses<sup>9</sup>. Multiple studies have proven the efficiency of Benzylamine<sup>7,10</sup>.

Other methods like cryotherapy, visible light therapy, low-level laser therapy and active manuka honey depend on availability of materials and affordability of the patients which is an important factor in countries like India. **Table 1** gives a quick brief review of various modalities used along with their usefulness.

**TABLE 1: VARIOUS TREATMENT MODALITIES WITH COMMENTS**

TREATMENT MODALITY	COMMENTS
Sodium bicarbonate mouth rinse	Simple, less effective, inexpensive
Aqueous base Chlorhexidine	Simple, alcohol base avoided, inexpensive, more effective
Active manuka honey	Bacteriostatic, antiseptic and wound healing promoting effects, reduction in bacterial infections, no improvement in mucositis, poor patient compliance due to sticky consistency, change in vehicle and consistency required
Benzydamine hydrochloride 0.15% oral rinse	Anaesthetic, anti-inflammatory, analgesic, anti-microbial effects, non-steroidal, effective, safe, well-tolerated, inexpensive, relieves dysphagia
Caphosol rinse	Simple, inconsistent results
Cryotherapy	Effective as supportive care, further large, well-defined randomized trials necessary
Oral supplementation of immune modulating formulae (L-arginine, $\omega$ -3 fatty acids, ribonucleic acids)	Reduction in severe acute oral mucositis, expensive, large trials required
Low-level laser therapy	Promising results, expensive, no antibacterial effects, requires special operational training and skills, further studies necessary to define dose, application time and number of sessions
Visible light therapy	Simpler, less expensive, antibacterial effects, effective, may reduce infection and promote healing
Others- antibiotic pastilles, antiseptic mouthwashes, anti-inflammatory agents, colony stimulating factors, physical barriers, mucosal coating agents, topical steroids, parental Amifostine, Glutamine, Prostaglandin E analogues	Lack of efficacy, difficulty in using, toxicity

Benzydamine oral rinse is simple, effective, safe, inexpensive and well tolerated therapeutic modality for prophylactic and palliative treatment of chemotherapy-induced oral mucositis. It holds a special significance in the developing countries such as India for the lower socioeconomic strata.

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