Supportive and Palliative Care

An Ayurveda Gargle Regimen in Management of Radiotherapy-induced Oral Mucositis

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Abstract

Background Radiotherapy-induced oral mucositis (RIOM) in patients with head and neck cancer may lead to significant morbidity. OM may result in erythema, ulceration, and pseudomembrane formation. The usual time of onset is second or third week of radiotherapy (RT), after the doses of 16 to 18 Gy. OM may cause severe pain, significant weight loss, increased resource use, interruption or discontinuation of the treatment, and added cost of supportive care.

Materials and Methods Patients who underwent RT and chemoradiation (CTRT) for head and neck squamous cell carcinoma (HNSCC) from 2015 to 2016 were included. The patients who were treated with the add-on Ayurveda gargle regimen (AGR) of sapthachhadadi gandoosham were evaluated against patients treated with standard symptomatic care (SSC).

Statistical Analysis Chi-square test was used to compare the difference between the two groups in the present study with SPSS (SPSS version 20 for Windows package SPSS Science, Chicago, IL, USA), software.

Result Grade III to IV OM was lower in the AGR group when compared with the SSC group (p < 0.001). Onset of OM was significantly delayed in patients from the AGR group (p < 0.001).

Conclusion The AGR with sapthachhadadi gandoosham is effective in delaying the onset and reducing severity of OM in HNSCC, without compromising the rate of locoregional recurrence.

Keywords
- oral mucositis
- Ayurveda gargle regimen
- sapthachhadadi gandoosham

Introduction

Oral mucositis (OM) is one of the most common acute toxicities in patients with neck squamous cell carcinoma (HNSCC), undergoing radiation/radiotherapy (RT) or chemoradiation (CTRT).

OM may cause significant morbidity during RT in HNSCC patients, which is one of the most common acute adverse
effects of RT. OM may result in erythema, ulceration, pseudomembrane formation. The usual time of onset is second or third week of RT after the doses of 16 to 18 Gy. OM is associated with severe pain, significant weight loss, increased resource use, interruption or discontinuation of the treatment, and added cost of supportive care. Preventative strategies are, therefore, valuable.1

Ayurveda, the ancient Indian system of medicine, has traditionally recommended topical gargle termed “gandoosham” in Sanskrit for the management of mucositis in general.2 This low-cost regimen may be an effective intervention to reduce the incidence and severity of OM and, thus, may positively contribute in the management of RT-induced OM in HNSCC.

Materials and Methods

Patients who received RT and CTRT for HNSCC from 2015 to 2016 were reviewed. Comparative analysis of the patients who were treated with the add-on Ayurveda gargle regimen (AGR) (~ Table 1) and patients on chlorhexidine gluconate 0.2% weight/volume gargle as standard symptomatic care (SSC) was done. This analysis included patients of either gender, from the age of 18 years to 70 years, with HNSCC including oral cavity, oropharynx, and nasopharynx undergoing RT or CTRT. Patients with recurrent HNSCC were included if they had not received RT previously.

Method of Use

Patients in the AGR group were following gargling with sapthachhadadi gandoosham 20 mL, diluted in 100 mL water just before use. The median frequency of gargling per day was 6 times (range 4–10). The gargles were advised from week 1 of RT for 7 weeks in the AGR group.

Patients were clinically examined weekly during the period of RT/CTRT and were followed-up for 3 months at regular intervals for post-RT acute toxicity. The electronic Lent Soma Scale was used to assess acute RT toxicity.15

<table>
<thead>
<tr>
<th>Sapthachhadadi gandoosham</th>
<th>Components (in grams)</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alstonia scholaris</td>
<td>Induces cellular immune response1</td>
<td></td>
</tr>
<tr>
<td>Vertiveria zizanioides</td>
<td>Antifungal4</td>
<td></td>
</tr>
<tr>
<td>Trichosanthes dioca</td>
<td>Anti-inflammatory; wound healing, antioxidant2</td>
<td></td>
</tr>
<tr>
<td>Cyperus rotundus</td>
<td>Antimicrobial, antioxidant2</td>
<td></td>
</tr>
<tr>
<td>Terminalia chebula</td>
<td>Antimicrobial,1 antiadherent8</td>
<td></td>
</tr>
<tr>
<td>Solanum xanthocarpum</td>
<td>Analgesic3</td>
<td></td>
</tr>
<tr>
<td>Picrorhiza kurroa</td>
<td>Antiallergic19</td>
<td></td>
</tr>
<tr>
<td>Santalum album</td>
<td>Antiviral, anticancer11</td>
<td></td>
</tr>
<tr>
<td>Glycyrrhiza glabra</td>
<td>Heals oral mucositis12-14</td>
<td></td>
</tr>
<tr>
<td>Cassia fistula</td>
<td>Antimicrobial</td>
<td></td>
</tr>
</tbody>
</table>

Discussion

Sapthachhadadi gandoosham has been documented as gargle for mucositis in ancient Indian doctrines of Ayurveda, and is presently known to have antimicrobial, antiviral, anti-inflammatory, antioxidant, anticancer, antiadherent, and antiallergic properties in various published biomedical researches. The wound healing and cellular immune responsive action would have contributed to the observed therapeutic role in radiation-induced OM.

Ayurveda gargle regime (AGR) is cost-effective and easy to use. AGR is observed to be effective in the management of...
OM and dysphagia, and in reducing need of NG tube feeding. Thus, it has improved quality of life in HNSCC patients undergoing RT and reduced the possibility of added cost of supportive and symptomatic care.

However, small sample size and nonrandomized study remain as the limitations of the present study. Randomized study with a larger sample is recommended.

**Conclusion**

The AGR with *sapthachhadadi gandoosham* is effective in delaying the onset and reducing the severity of OM in HNSCC without compromising the rate of locoregional recurrence.

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None.

**Conflicts of Interest**

None declared.

**References**