Clinical evaluation of efficacy of STOMATAB mouth ulcer gel on patients of Cancer suffering from mouth ulcer

BACKGROUND:

What are cancer-related mouth sores?

Cancer-related mouth sores are sores or ulcers that form on the inside lining of the mouth or on lips. The mouth sores appear burn-like and can be painful, making it difficult to eat, talk, swallow and breathe. Sores can appear on any of the soft tissues of lips or mouth, including gums, tongue, or the roof and floor of mouth. Sores can also extend into the esophagus.

How do cancer treatments cause mouth sores?

Chemotherapy and radiation — alone or combined — can cause mouth sores. That's because these cancer treatments are intended to kill rapidly growing cells — such as cancer cells. Some healthy cells in the body also divide and grow rapidly, including the cells that line the inside of the mouth. Unfortunately these healthy cells are also damaged by chemotherapy and radiation. Damage to the cells in mouth makes it difficult for mouth to heal itself and to fend off germs, leading to sores and infections.

Chemotherapy and radiation both can impair body's germ-fighting system (immune system). With an impaired immune system, viruses, bacteria and fungi can more easily infect the mouth, causing mouth sores or making mouth sores worse.

Bone marrow or stem cell transplants also can lead to mouth sores if the patient develops graft-versus-host disease (GVHD). In GVHD the transplanted cells or stem cells try to reject your body's normal cells. The transplanted cells view your body's cells as foreign and attack them. Mouth sores are just one sign of GVHD.

Chemotherapy

Whether patients experiences mouth sores while undergoing chemotherapy depends on the type and dose of medication they receive, as well as how often they receive the treatment. The chemotherapy drugs most likely to cause mouth sores include:

- Capecitabine
- Cisplatin
- Cytarabine
- Doxorubicin
- Etoposide
- Fluorouracil
- Methotrexate.

Mouth sores caused by chemotherapy treatment usually develop a few days after treatment begins and go away within two or three weeks after stopping chemotherapy. The mouth sores usually reach their peak around the seventh day after chemotherapy treatment ends.

Head or neck radiation therapy:

Only radiation aimed at head or neck causes mouth sores. Whether radiation treatment will cause mouth sores depends on how much radiation a patient receives and whether they are also receiving chemotherapy at the same time. Patients may begin to experience mouth pain two to three weeks after begining radiation. More-intense doses of radiation will cause mouth sores to develop more quickly. Mouth sores from radiation may last four to six weeks after last radiation treatment.

Incidence[1]:

85-100% of patients receiving radiotherapy for head and neck cancer.

- **25-45%** had severe oral mucositis.

75-100% of patients receiving stem-cell transplantation (chemotherapy is used to prepare the patient's system beforehand).

- **25-60%** had severe oral mucositis.

5-40% of patients receiving treatment for solid tumours with myelosuppressive chemotherapy.

However, the true incidence of oral mucositis may be even higher as oral mucositis that is not classed as 'severe', but which may have an impact on patients' comfort, is not consistently reported[2].

Severity[2]:

The oral side effects associated with chemotherapy and radiotherapy can have a severe impact on patients' lives and can also affect their treatment. In patients who experience moderate to severe oral mucositis (grades 3−4):

- **1 in 3**
  - will have their current chemotherapy stopped, with another treatment being sought, or
  - will need to have their next cycle of chemotherapy delayed.

- **2 in 3**
    - will need to have their next dose reduced
    - will require hospitalisation
- **Nearly 3 in 4**
    - will require a feeding tube to ensure adequate nutrition.

As well as these problems, oral mucositis can lead to:

- Increased risk of infection and fever, Need for strong painkillers (e.g. opioids), Increased weight loss[3].
- Restricted mouth care & Impaired speech[4].

Treatment for mouth sores in such patients:
Antibiotic therapy may be needed upon secondary infection of the sores but these are synthetic drugs, which cause several adverse effects, so there are many herbal drugs, which are also used for treating mouth ulcers without any side effects. Polyherbal preparations are generally the mixtures of extracts, juices, pulps, secretions and exudations or powders of medicinal herbs in solid, liquid or semisolid forms with or without a suitable base.

STOMATAB GEL available in gel form, a product of **"Sagar Pharmaceuticals"** - Herbal healthcare division of **BPRL**, contains herbal ingredients which are strong Astringents, possessing analgesic, anti-inflammatory, Wound healing, Styptic, and antibacterial properties, which is helpful in controlling various forms of mouth ulcer effectively.

Ingredients:

1. Khadira	**Acacia catechu**	**6.90%**
2. Jeeraka	**Cuminum cyminum**	**7.00%**
3. Bakula	**Mimusops elengi**	**7.00%**
4. Kumari	**Aloe vera Gel**	**2.10%**

1. **Acacia catechu:**

The drug enhances wound healing activity which may be due to antimicrobial activity and anti inflammatory activity of the phytoconstituents present[5]. It is also an Anti bacterial[6], is highly active against oral pathogens[7], and is an Anti-oxidant[8].

2. **Cuminum cyminum:**

The drug possesses anti-bacterial[9], anti-fungal[10], chemopreventive[11], Anti inflammatory[12] properties.

3. **Mimusops elengi:**

Results of in-vitro study indicates that the extracts of *M. elengi* have antibacterial potential and can be used in the treatment of infectious diseases caused by resistant microorganisms[13], The drug has Anti-pyretic, Anti-inflammatory & Analgesic properties[14].

4. **Aloe vera:**

Inside the leaf is a jelly-like substance. Early users of Aloe Vera discovered that when the jelly was applied to a wound, it would heal faster – a remarkable feat in a time, long before anti-biotic ointments, when the infection of a minor wound was often fatal.

The drug has neuroprotective[15], radioprotective[16], Anti Fungal[17], Wound Healing[18, 19] properties.

Aims of the Clinical Trial:

To assess the efficacy of Stomatab Gel on patients of cancer suffering from mouth sores based on various parameters.

Parameters for evaluation will include:

Based on the relevant signs & symptoms observed in patients of cancer suffering from mouth sore the following parameters have been included in the present study to assess the overall result of therapy with "Stomatab Mouth Ulcer Gel". And to obtain statistical data for the significance of results.

1. Local pain (Mouth sore)
2. Size of lesion
3. Colour
4. Quality of life.

Note: The parameters/criteria for evaluation mentioned above are based on our observations, however any other parameter/investigation can be included as per the opinion of the Doctor.

Follow up:

Follow up study shall include:

- Resistance developed to the drug (Stomatab Gel)
- Adverse Drug Reactions if any.
- Patient compliance
- Suggestions for innovation in the product.

CLINICAL RESPONSE GRADING:

Parameter	**Day1**	**Day2**	**Day3**	**Day4**	**Day5**	**Day6**	**Day7**
1. PAIN							
2. SIZE OF LESION							
3. COLOUR							
4. QUALITY OF LIFE							
5.							
6.							
7.							

Remarks from Follow up:

Grading Guidelines:

1. **Pain:**
   a. Grade **0** – No pain
   b. Grade **1** – Mild pain
   c. Grade **2** – Moderate pain
   d. Grade **3** – Severe pain.
2. **Size of lesion:**
   a. Grade **0** – No lesion
   b. Grade **1** – 1-3.9mm
   c. Grade **2** – 4 – 6.9mm

d. Grade **3** – More than 7mm

3. **Colour:**
   a. Grade **0** – No discolouration
   b. Grade **1** – yellowish
   c. Grade **2** – Grayish
   d. Grade **3** – Whitish
4. **Quality of life:**
   a. Grade **0** – Feels happy, No complaints
   b. Grade **1** – feels uneasy only while eating, talking etc
   c. Grade **2** – Feels uneasy throughout the day
   d. Grade **3** – Unable to perform day routine works due to condition.

Clinical Global Impression – Doctor – (V.Good / Good / Average / Poor)

Efficacy:_____ Tolerability:_____

Clinical Global Impression – Patients – (V.Good / Good / Average / Poor)

Efficacy:_____ Tolerability:_____

REMARKS:

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