Risk factors and needs for pediatric cancer patients with mucositis

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# Faculty Disclosure

<table>
<thead>
<tr>
<th>Company Name</th>
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<th>Consulting/Advisory Board</th>
<th>Funded Research</th>
<th>Royalties/Patent</th>
<th>Stock Options</th>
<th>Ownership/Equity Position</th>
<th>Employee</th>
<th>Other (please specify)</th>
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Background pediatric oncology

- Rare disease (leukemia’s, solid tumors, CNS tumors)
- Increased survival over the years
Background pediatric oncology

- Rare disease (leukemia’s, solid tumors, CNS tumors)
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Background pediatric oncology

- Rare disease (leukemia’s, solid tumors, CNS tumors)
- Increased survival over the years
- At the cost of increased morbidity and mortality and decrease of QOL
Oral Mucositis, Clinic

- Oral ulcers > decreased intake
- Pain
- Opportunity for infections
- Decreased quality of life
- Dose limiting toxicity
Oral Mucositis, pathophysiology

Sonis ea, 2004
Oral Mucositis, incidence in children

• ?
Oral Mucositis, incidence in children

- ?

- Small studies, selected cohorts
  - 40% cohort study, n=57 (Ip ea 2014)
  - 42% observational study, admitted (n=76) pts (Allen, 2018)
  - 40% prospective cohort (n=140, hematological / solid tumors, cheng, 2011)
Oral Mucositis, risk factors

- Diagnosis: ALL, AML, NHL > CNS/solid tumors (Allen ea, 2018)
- Chemotherapie eg methotrexate, anthracyclins / radiotherapy
- Earlier oral mucositis
- HSV-1 presence?
- Genetics?
  - Many studies, small numbers, conflicting data.
  - Maybe MTHFR A1298C polymorphism
Oral Mucositis, scales

Many scoring systems

CTCAE 4.03

<table>
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<tr>
<th>Gastrointestinal disorders</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Adverse event</td>
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<tr>
<td><strong>Mucositis oral</strong></td>
<td>1</td>
</tr>
<tr>
<td>Asymptomatic or mild symptoms; intervention not indicated</td>
<td>2</td>
</tr>
<tr>
<td>Moderate pain; not interfering with oral intake; modified diet indicated</td>
<td>3</td>
</tr>
<tr>
<td>Severe pain; interfering with oral intake</td>
<td>4</td>
</tr>
<tr>
<td>Life-threatening consequences; urgent intervention indicated</td>
<td>5</td>
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<tr>
<td>death</td>
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</table>
Oral Mucositis, scales

- CHIMES (children’s international mucositis evaluation scale) questionnaire
- Self report 8-18 yrs, parent report < 8 yrs
- Pain / function / pain medication
Oral Mucositis, prevention

Clinical practice guideline Sung ea

- **oral cryotherapy:**
  (weak recommendation, moderate quality evidence)
  icecubes, restricted to agents with short infusion time and short half-life

- **low level light therapy**
  (weak recommendation, high quality evidence)
  special equipment, feasible to deliver in kids?

- **keratinocyte growth factor (KGF) in SCT**
  (weak recommendation, high quality evidence)
  lack of long term follow-up data, kids prone for more adverse events?
Oral Mucositis, miscellaneous

- Caphosol did not prevent or cure oral mucositis in pediatric studies
- Other mouth washes did not either (topical vit E, TGF-beta, sucralfate, chewing gum etc)
Oral Mucositis, adults

- MASCC guideline 2014 (update upcoming)
- Mainly adults!
- Oral care protocol, but no chlorhexidin mouthwash
- Morphine for pain
- Cryotherapy / LLLT / Palifermin like Sung
- Against the use of oral (antibiotic) rinses / pastes

- Benzydamine / zinc suppletion, but no child data
Oral Mucositis, clinical practice

• Introduction of a standard protocol in itself improves care!

• Prevention: Oral care protocol – tooth brush, mouth rinses (no chlorhexidin)

• Treatment: Supportive care!
  – Hydration, pain management (morphine!)
Conclusion

- Frequent side effect
- No good Incidence data
- Little evidence on prevention
- Little evidence on therapy

- Much to do!