



# Risk factors and needs for pediatric cancer patients with mucositis

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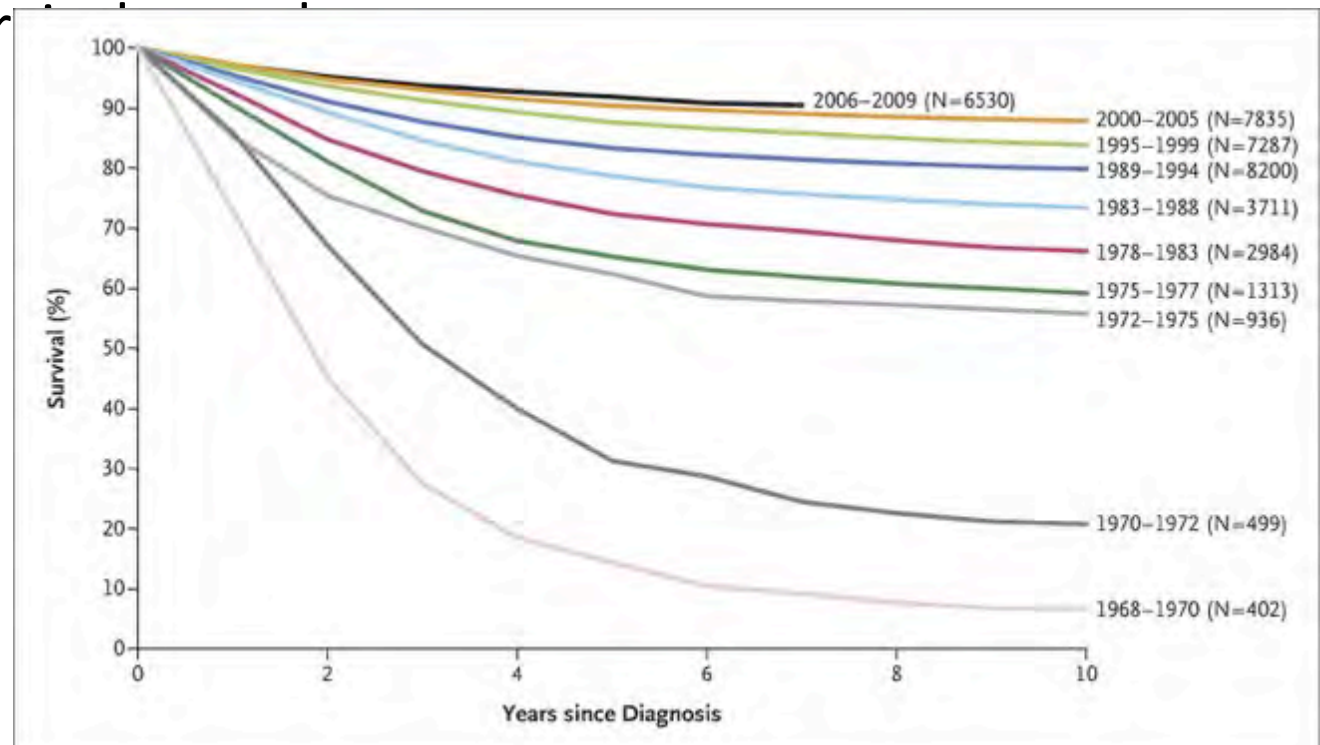


# Background pediatric oncology

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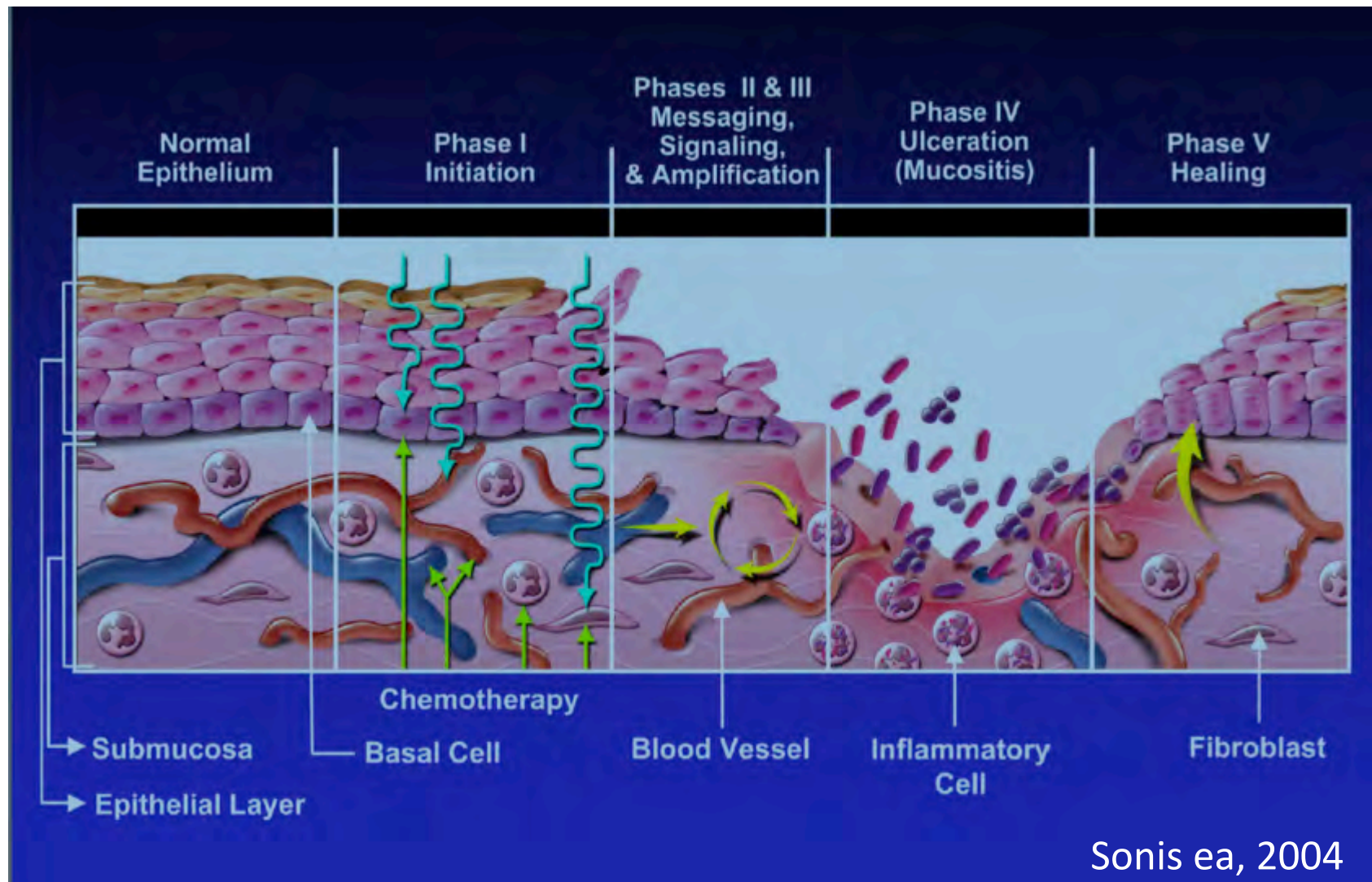
- Rare disease (leukemia's, solid tumors, CNS tumors)
- Increased survival over the years
- At the cost of increased morbidity and mortality and decrease of QOL

# Oral Mucositis, Clinic

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



# Oral Mucositis, pathophysiology



# 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) p
  - 40% prospective cohort (n=140, hematological / solid tumors, cheng, 2011)



# Oral Mucositis, risk factors

- Diagnosis: ALL, AML, NHL > CNS/solid tumors  
(Allen et al, 2018)
- Chemotherapy 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

## Gastrointestinal disorders

### Grade

Adverse event	1	2	3	4	5
Mucositis oral	Asymptomatic or mild symptoms; intervention not indicated	Moderate pain; not interfering with oral intake; modified diet indicated	Severe pain; interfering with oral intake	Life-threatening consequences; urgent intervention indicated	death

# Oral Mucositis, scales

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

## PAIN

1. Which of these faces best describes how much pain you feel in your mouth or throat today? Tap one.



**0**

No  
hurt



**1**

Hurts a  
little bit



**2**

Hurts a  
little more



**3**

Even  
harder



**4**

Hurts a  
whole lot



**5**

Hurts  
worst

# 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 ped 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!

