

Case Based Problem Solving

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Financial Disclosure

- I have no significant relationships to disclose

CASE

- AB is a 38 year old male
- History of Acute Lymphoblastic Leukemia (ALL), in complete remission (CR)
- RECENT:
 - Relapsed ALL
 - Planned for
 - high dose chemotherapy (HDC)
 - total body irradiation (TBI)
 - stem cell transplantation (SCT) from donor

CASE: CASE HISTORY

- Past medical history
 - Moderate hypertension, controlled with ACE inhibitor
 - No other systemic abnormalities or medicines
 - No known allergies
- Social
 - Smoking: 1 pack/day for 8 years, quit 15 years ago
 - Alcohol: 2 glasses wine/day, less since diagnosis
 - Married
 - Computer programmer for 15 years

CASE: INDUCTION CHEMOTHERAPY

- Diagnosed October, 2004 with ALL
- Induction chemotherapy (vincristine; prednisone; asparaginase; daunorubicin; cyclophosphamide); CR

CASE: POST-REMISSION CHEMOTHERAPY

- Postremission consolidation, continuation and reinduction chemotherapy (6-mercaptopurine; vincristine; prednisone; daunorubicin; methotrexate) for two years
- Relapse October 2007

CASE: ALL RECURRENCE

- Relapsed ALL, treatment October, 2007:

- Myeloablative conditioning regimen
 - fractionated 1335 cGy TBI
 - HDC (cyclophosphamide)

- Allogeneic HSCT from a matched unrelated donor

CASE: INDUCTION CHEMOTHERAPY - Oral Health

- Prior to induction chemotherapy October 2004, latest dental examination 2 years earlier
- No apparent oral concerns

GUIDELINES

- Mucositis Incidence

- WHAT IS THE RISK OF DEVELOPING ORAL MUCOSITIS?
 - Almost 100%

- WHAT IS THE RISK OF DEVELOPING GASTRO-INTESTINAL (GI) MUCOSITIS?
 - Almost 100%

Oral Mucositis Incidence

- HDC + HSCT
 - Oral mucositis incidence near 100% for any grade
 - 30-50% Grade 3 and 4 oral mucositis without TBI
 - >60% Grade 3 and 4 oral mucositis with TBI
- Previous history of bad mucositis is not a clear predictor of subsequent mucositis

Oral Mucositis Risk Factors

- WHAT ARE THE RISK FACTORS OF ORAL MUCOSITIS?
 - Type and dose of chemotherapy
 - Radiation to head and neck
 - TBI
 - Genetics

GUIDELINES

- Costs

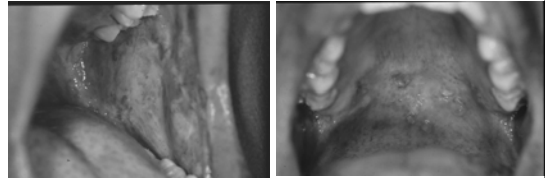
- WHAT IS THE LIKELY COST OF GETTING OM/GIM?
- Non-transplant chemotherapy
 - With grade 3 or 4 oral mucositis:
 - 35% require dose delays
 - 60% require dose reduction
 - 30% have cessation of chemotherapy
 - With standard dose chemo and grade 3 or 4 oral mucositis:
 - 60% have fever and 62% require hospitalization
 - With high dose chemo and grade 3 or 4 oral mucositis:
 - 80% requiring opioid analgesic
- COST: \$5,565/cycle

Costs

- High dose chemo and transplant
 - If develop oral ulceration:
 - Require 5.8 additional days of narcotics
 - Require 1.9 additional days of TPN
 - Oral mucositis associated with ↑ systemic infection and ↑ fatigue
 - ↑ of supportive care = ↑ need intensive nursing care, medical and dental specialist
- COST: \$42,749

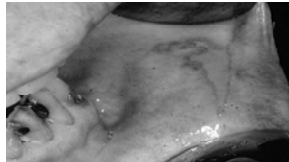
GVHD

- Acute GVHD can cause oral ulceration
- Onset - Day 18-19

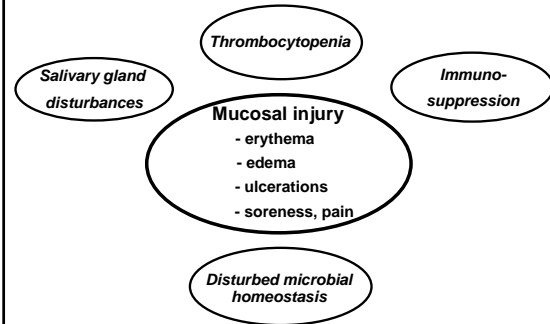


CASE: post HDC and allogeneic HSCT

- Patient develops grade 2 oral mucositis 4 days after transplant
- Can eat solid foods
- Rates pain as a 4 on 1-10 scale



ORAL MUCOSITIS



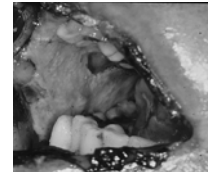
NO GUIDELINES

- Topical Anesthetics

- HOW SHOULD PATIENT BE MANAGED?
 - No recommendations for use of topical anesthetics: lack of well designed trials
 - Topical anesthetics reasonable for mild/moderate and breakthrough pain management: needs further evaluation
 - Check that the patient eats

CASE: post HDC and allogeneic HSCT

- Patient progresses to grade 4 oral mucositis day 7 post transplant
- TPN
- Rates pain as a 10 on 1-10 scale



Guideline

- How should patient be managed
 - PCA

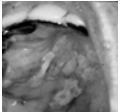
NO GUIDELINES

- Malnutrition

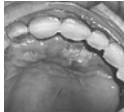
- WHAT IS THE RELATIONSHIP OF MALNUTRITION TO MUCOSITIS?
 - Grade 3 and 4 reduce ability to eat, with ↑ risk of malnutrition
 - With SDC: 70% of patients with grade 3 or 4 oral mucositis will require feeding tubes to maintain adequate nutrition
 - With HDC: 87% require feeding tubes
- Malnutrition recognized as a poor prognostic factor in cancer therapy

Continue Assessment of Oral Conditions

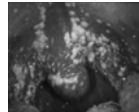
- Check for fungal, bacterial or virus infections that demand treatment



Bacterial infection
E. coli



Bacterial infection
Pseudomonas



Fungal infection
Candida albicans



Virus reactivation
Herpes simplex

Questions?