

Early Experience With Nurse Led Grade Based And Electronic Medical Record (EMR) Based Radiotherapy Side Effects Management

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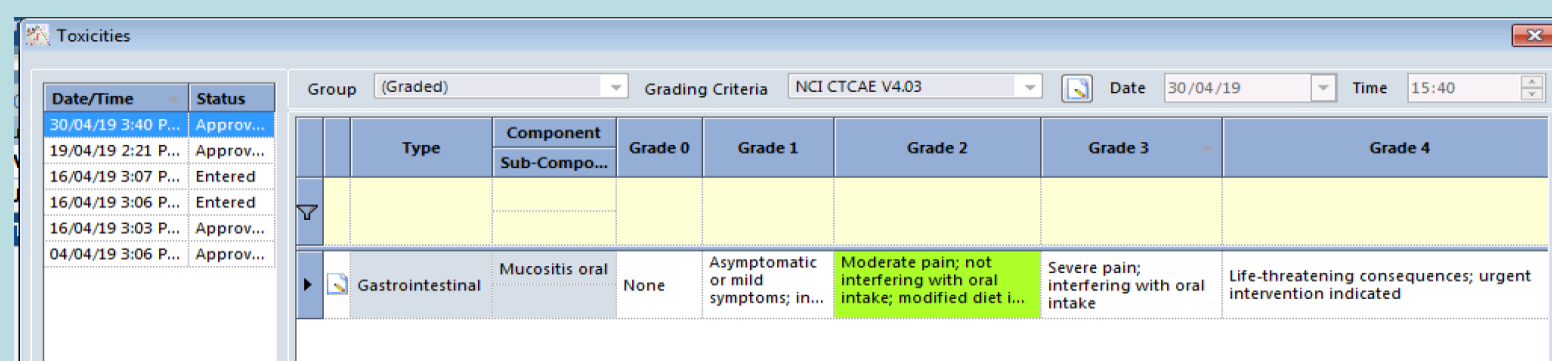
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INTRODUCTION:

Radiotherapy is an important modality in the management of cancer treatment. All patients receiving external radiotherapy are at potential risk of developing radiation toxicities within the treatment field but there was inconsistency in side effects recording due to the free text format and there was no standard in side effects management as each Oncologist had their own preferred methods. Hence, it is crucial to introduce a standard for scoring and managing radiotherapy side effects for consistent and accurate analysis of the radiation toxicities.

METHODS:

National Cancer Institute Common Terminology Criteria for Adverse Events (version 4.03) in ARIA® OIS and side effects management guidelines which have been reviewed and approved by Clinical Oncologists were used and all curative radiotherapy patients with radiotherapy of more than 10 fractions were assessed by Radiation Oncology nurses on every Fridays. Each of these patients had electronic toxicity grading recorded.



| Date/Time | Status | Group | Grading Criteria | Date | Time |
|--------------------|-----------|----------|------------------|----------|-------|
| 30/04/19 3:40 P... | Approv... | (Graded) | NCI CTCAE V4.03 | 30/04/19 | 15:40 |
| 19/04/19 2:21 P... | Approv... | | | | |
| 16/04/19 3:07 P... | Entered | | | | |
| 16/04/19 3:06 P... | Entered | | | | |
| 16/04/19 3:03 P... | Approv... | | | | |
| 04/04/19 3:06 P... | Approv... | | | | |

| Type | Component | Sub-Compo... | Grade 0 | Grade 1 | Grade 2 | Grade 3 | Grade 4 |
|------------------|----------------|--------------|---------|--------------------------------------|---|---|--|
| Gastrointestinal | Mucositis oral | | None | Asymptomatic or mild symptoms; in... | Moderate pain; not interfering with oral intake; modified diet i... | Severe pain; interfering with oral intake | Life-threatening consequences; urgent intervention indicated |

| ORAL MUCOSITIS GRADING SCALE* | | | | |
|---|--|---|--|---------|
| NCI Common Terminology Criteria for Adverse Events (Version 4.03) | | | | |
| GRADE 1 (Mild) | GRADE 2 (Moderate) | GRADE 3 (Severe) | GRADE 4 (Life-threatening) | GRADE 5 |
| 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 |

| Management of Oral Mucositis | |
|--|--|
| Grade 2-3 | |
| ↓ | |
| URGENT: Requires medical attention within 24 hours | |
| Patient Care and Assessment | <ul style="list-style-type: none"> Collaborate with physician if patient: <ul style="list-style-type: none"> Requires new or change in prescription Requires further evaluation and assessment in an ambulatory setting |
| Oral Hygiene | <ul style="list-style-type: none"> Consider modifications to basic oral hygiene recommendations: <ul style="list-style-type: none"> Flossing <ul style="list-style-type: none"> Discontinue flossing if: <ul style="list-style-type: none"> Flossing causes pain or bleeding gums which do not stop after 2 minutes Brushing <ul style="list-style-type: none"> Brushing more gently with toothbrush if: <ul style="list-style-type: none"> Brushing causes discomfort Some bleeding occurs but stops within 2 minutes Oral rinses <ul style="list-style-type: none"> Increase use of mouth rinses to: <ul style="list-style-type: none"> Every 1-2 hours while awake Every 4 hours overnight (if awake) Increase frequency as needed for symptom severity increases Lip care <ul style="list-style-type: none"> Continue to apply water based lubricant to protect and moisten lips Dentures <ul style="list-style-type: none"> Keep dentures out of mouth as much as possible until symptoms resolve |
| Dietary Management | <ul style="list-style-type: none"> Change food texture, consistency, and temperature according to individual tolerance (e.g. puree diet) May require oral supplementation or IV hydration if unable to maintain adequate fluid intake |
| Management of Oral Complications | <ul style="list-style-type: none"> Oral pain <ul style="list-style-type: none"> For pain from moderate to severe oral mucositis, systemic analgesics are indicated A topical anesthetic or analgesic may be prescribed in addition to systemic analgesia Local infection <ul style="list-style-type: none"> Review recent lab reports, culture any suspect areas, check temperature Review prescribed medications with patient Minor bleeding with trauma (stops after 2 minutes) <ul style="list-style-type: none"> Assess complete blood count, particularly platelet function, and hemoglobin Rinse mouth with ice water and apply pressure to control bleeding- suggest using frozen tea bag/wet gauze Dry mouth (xerostomia) <ul style="list-style-type: none"> Use sugarless gum or candy to help stimulate saliva Keep bottle of water present at all times, encourage frequent sips |

RESULT:

With the introduction of the grade and electronic medical record (EMR) based radiotherapy toxicity recording system resulted in improvement in documentation of toxicity and patients' side effect management. In the 6 months after grade and EMR based implementation, 70% toxicity grading was recorded. A total of 4 episodes of high-grade toxicity were identified during this period. This type of data also provided us with a range of expected toxicity for our patient population.

DISCUSSION:

The introduction of the grade and EMR based radiotherapy toxicity recording system resulted in improvement in documentation of toxicity and patients' side effect management.

CONCLUSION:

An EMR based radiotherapy toxicity recording practice enables consistent, timely and accurate of the treatment toxicity documentation and approved grade based side effect management guidelines enables radiation oncology nurses to manage radiotherapy patients with Clinical Oncologist acceptance which is important to improve quality of life for patients.

REFERENCES:

1. Dean BB, Lam J, Natoli JL, Butler Q, Aguilar D, Nordyke RJ. Use of electronic medical records for health outcomes research: A literature review. Med Care Res Rev. 2010;66(6):611-638
2. Fox E, Barrett-McNeil K, Khoo LH, Middleton M. Nurse led electronic toxicity scoring in head and neck radiotherapy. Eur J Oncol Nurs. 2011 April; 15(2): 112-7