



THE UNIVERSITY OF TEXAS
MD Anderson
~~Cancer Center~~

Making Cancer History®

Emergency Care of the Cancer Patient

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SUPPORTIVE CARE IN CANCER



Faculty Disclosure

<input checked="" type="checkbox"/>	No, nothing to disclose
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Case report

May 2009 73 year old Chinese male presented with hematuria

Left nephroureterectomy for papillary transitional cell carcinoma of the renal pelvis.

Sept 2011 Due to disease progression on anti-metabolic therapy presented to MDACC –further chemo without response

November 2014 initiated on a nivolumab and ipilimumab after failure of multiple chemotherapeutic agents and surgeries

Dec 6 2014 patient presents to local emergency facility complaining of dark urine. A urinalysis was performed and he was diagnosed with a UTI and discharged with antibiotics.



Who is seeing our patients?

How are they trained?

Whose responsibility is it?

Cancer patients have longer lengths of stay in ED's

Higher admission rates

Higher mortality rates

Often drive hours past many hospitals seeking care at

Cancer competent EDs

Global disease burden

Cancer is one of the leading causes of morbidity and mortality worldwide, with approximately 14 million new cases in 2012

The number of new cases is expected to rise by about 70% over the next 2 decades.

Cancer is the second leading cause of death globally, and was responsible for 8.8 million deaths in 2015. Globally, nearly 1 in 6 deaths is due to cancer.

Improvement in 10 year survival from 1954 to 2004

Breast 25%  76.5%

Prostate 8%  90%

Non small cell lung 0%  18%

Colon cancer 20%  40%

Meanwhile.....

Cancer care is becoming more complex, with many new treatments relying on molecularly targeted agents and Immuno and novel therapies:

Vaccines

Clostridium novyi

Combination with radiation

Viral injections

Sensitizers

Car T Cells

Targeted Therapies

Immunotherapies

Check point inhibitors

Unfortunately

Few studies have examined cancer patient ED usage or predictors of utilization.

Most reports to date have focused on different cancers, making comparison across studies difficult.

Population based study in California

Recently diagnosed adults:

16% of newly diagnosed individuals with cancer used the ED within 30 days of diagnosis

35% within 6 months of diagnosis

44% within 1 year of diagnosis

The cumulative incidence of at least one ED visit was 35% (n = 70,813) within 180 days after diagnosis

Visit rates varied by cancer type: individuals with pancreatic (62%), brain (60%), and lung (55%) cancers had the highest cumulative incidences of ED use within 180 days of diagnosis

Of those patients having at least one ED visit within 180 days of diagnosis, 44% (n = 31,080) had two or more visits and 21% (n = 14,760) had 3 or more visits.

These findings suggest that ED use by cancer patients is more than double that of the US general population and is higher than previously estimated for cancer patients.

In 2010, about 21% of the US population visited the ED, compared with 44% of cancer patients in the same time period

About 51% of visits resulted in admission to the hospital

High rates of ED use may reflect *excessive fragmentation* in cancer care, or patients' inability to access providers when acute concerns arise.

Is it really a failure for a cancer patient to go to the ED?

In The US

1500 cancer centers

49 Comprehensive cancer centers

~3 cancer ED's providing 24/7 care

Two days later

presented to the MDACC emergency department with:

low back pain

profound weakness unable to ambulate,

difficulty opening his mouth, eating, and speaking

Objective findings:

Vital signs stable

Bilateral ptosis and extraocular and generalized muscle weakness.

Laboratory:

creatine kinase 13,710 U/L (55–170)

AST 1540 IU/L (15–46)

ALT 378 IU/L (7–56)

CK-MB 149.1 ng/mL (0.6–6.3)

troponin I 7.98 ng/mL (<0.03)

LDH 3697 IU/L (313–618)

myoglobinuria

Admitted to the Intensive Care Unit

Diagnosed with acute rhabdomyolysis associated with severe polymyositis

He received intravenous fluids and methylprednisolone

On Dec 12 infliximab was added and patient was intubated.

ED crowding, long waits, and unpredictable treatment environments can also make an ED visit an unpleasant experience for the patient. ED visits during cancer treatment can be particularly troubling and present health concerns for patients who are immunocompromised. In particular, cancer patients in the ED have been found to experience delays in the administration of analgesics, antiemetics, or antibiotics.....*Blah, Blah, Blah, Blah*

**This is a problem---what are we doing about it?
Whose responsibility is it?**

What Oncology Training is Available?

Oncologic emergency fellowship MD Anderson and Ohio State

ED training-Baylor ED residency rotation

Internal medicine residency

MD Anderson and Sloane Kettering Oncologic Emergencies Seminar

At MDACC no formal training or cross communication between ED and oncologists

Oncologic Emergency Integrative Lecture Series

Case report

20 year old female smoker presents to ED x 2 and primary care provider x 1 for cough and blood streaked purulent sputum.

SocHx: college student, +cigarettes, alcohol

PMHx: Hodgkins lymphoma 6 years prior adriamycin, bleomycin, vincristine, doxorubicin, mantle radiation

How would you evaluate this patient ?

Case report

Patient is given three separate courses of antibiotics without improvement. No imaging.

Six weeks later she is seen in local emergency department and admitted to the floor/ward for hemoptysis.



Case report

Patient had massive hemoptysis and respiratory arrest and was intubated and transferred to ICU.

Hgb 6.3

Cultures *Mycobacteria gordonae*

Solutions/Models of Care

Dedicated Cancer Emergency Departments

Dedicated Cancer Urgent Cares

Integrated Cancer Emergency Departments

Acute Medical Units in Cancer Hospitals

Acute Oncology Service

The Cancer ED's

MD Anderson and Memorial Sloan Kettering

Attached to cancer hospital

Dedicated to cancer patients

Over 27K visits per year

Dedicated faculty

Academic institutions

Independent decision making ED doctors

Common Diagnoses

Neutropenic Fever/Sepsis

Hypotension

Abdominal pain

Disease progression

Bowel obstruction

Ascites

Constipation

Nausea and vomiting

Chemo induced

Bowel obstruction

Medication

Shortness of breath

Pneumonia/atypical

Pleural effusion

PE

Disease progression

Anemia

Stridor

Renal failure

Dehydration

Obstruction

Chemo toxicity

Therapeutic Toxicities

target therapy

Radiation

Immunotherapy

Anti-metabolic therapy

Electrolyte abnormalities

Bleeding

Thrombocytopenia

Lovenox

Tumor

Headache

Spinal

Metastatic disease

Pain

Disease progression

Neuropathy

Neupogen

Cord Compression

Opiate overdose

PE on CT

Altered mental status

Brain tumor

Medications

Sepsis

MD Anderson Emergency Center



Memorial Sloan Kettering Cancer Center



Asan Medical Center



Asan Medical Center Cancer ER

Cancer Emergency Room (CER) is located a level above the main ER

30 beds

9K visits per year

Reduced admission rate 85% from to 42%

Prolonged length of stay, average 43 hours

Cross between ER and observation with multiple procedures

Asan CER

Staffed by ER physicians in combination with internal medicine and oncology fellows

Oncologists make rounds in the Cancer ER and participate in most care decisions

Oncology fellows are notified immediately of patients arrival in Cancer ER



Ohio State/Wexner Cancer Center

Section of ED that is dedicated to cancer patients but can flex between cancer and non cancer care

Projected >6K visits per year

Hoping to address length of stay and infection risk by providing more expert care to this patient group. Staffed by emergency physician and mid level providers with oncology experience



Clatterbridge Cancer Center and Merseyside and Cheshire Cancer Network

Goal: provide quality emergency care to patients receiving outpatient cancer treatment in multiple divergent locations

Since it was an established network, they had control over the different ER's

Established an acute oncology consulting service called the AOS

Clatterbridge Cancer Center



Acute Oncology Service

Focused on education of ER doctors and providing expertise to admitting physicians

Evaluate patients within 24 hrs of arrival

Develop care pathways especially to expedite evaluation of patients with malignancy of unknown origin

The Christie---Acute Medical Unit

Comprehensive Cancer Center/One of Europe's Largest

Acute medical unit

- **21 beds**
- **One consultant**
- **One Nurse Practitioner**
- **Doctors in training**

Why were these cancer ED's started?

MD Anderson—to relieve oncologists

Asan ---better utilization of inpatient beds

Ohio State---reduce length of stay

Merseyside----improved quality of care

Future Directions

- **More collaboration between acute providers and oncologists**
- **More collaboration between acute/emergency providers**
- **More educational emphasis on cancer of acute care/emergency**
- **Research focused oncologic emergencies**

Best Practices for Cancer ED's

- **Dedicated treatment spaces**
- **Ability of bedside team to complete invasive palliative procedures without requiring admission, such as thoracentesis or paracentesis**
- **Coordinated care with the primary oncology providers and case management**
- **Order sets for frequently presenting conditions**

Unanswered Questions:

NF procalcitonin

Evaluation and Treatment of VTE

Optimal treatment of Bowel obstruction

Hypercalcemia calcitonin? Biphosphonates

Constipation

Unanswered Questions:

Breakthrough nausea vomiting

Infected or thrombosed central line

Rectal exam in NF

Abscess drainage in NF