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Co-morbidities in Elderly Breast and Lung Cancer Patients who receive Chemotherapy of NCCN defined Intermediate Risk of Febrile Neutropenia

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Presenter Disclosure Information

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- None

Introduction

- Febrile neutropenia (FN) and hospitalizations for infections are serious potential complications of myelosuppressive chemotherapy treatment in cancer patients.
- Previous research suggests that certain co-morbidities are associated with higher risk of FN.
- Little is known about the co-morbidity burden in elderly patients taking NCCN defined FN intermediate risk (IR) (10%-20%) chemotherapy regimens.

Mechanisms of Chemotherapy Associated Infection

- Chemotherapy, advanced age, and co-morbidities increase FN risk through one or more of:
 - Bone Marrow Suppression/Neutropenia
 - Impaired neutrophil/other immune function
 - Disturbance of Skin/Mucosal barrier
 - Disturbed microbial populations

Methods

- **Cohort:** Elderly (ages 65+) breast or lung cancer patients who initiated their first course of intermediate risk chemotherapy between 7/1/2007 and 11/30/2011
- **Data:** 20% Medicare sample with Parts A and B (included patients were non-HMO enrollees)
- **Co-morbidity, prior hospitalizations and age** were defined in the 6 months before chemotherapy initiation
- **G-CSF use** were identified during the first cycle of chemotherapy
- **NCCN** (National Comprehensive Cancer Network) guidelines were used to classify each patient's chemotherapy regimen as high, intermediate, or low/other risk of febrile neutropenia

Methods – Intermediate vs. High Risk Chemo Regimens

Top 4 regimens per NCCN defined FN risk group.

Breast Cancer

Intermediate Risk (N=1,686)		
Regimen	N pts	%
Paclitaxel every 21 days	649	57.6
CMF classic	516	30.6
Paclitaxel, Trastuzumab	322	19.1
Docetaxel every 21 days	140	8.3

High Risk (N=1,900)		
Regimen	N pts	%
Dose dense AC + sequential T	1,037	54.6
TAC	723	38.1
Docetaxel + trastuzumab	69	3.6
AT	47	2.5

Lung Cancer

Intermediate Risk (N=10,961)		
Regimen	N pts	%
Carboplatin/Paclitaxel	6,198	56.5
Etoposide/carboplatin	2,504	22.8
Cisplatin/Etoposide	1,467	13.4
Cisplatin/Vinorelbine	332	3.0

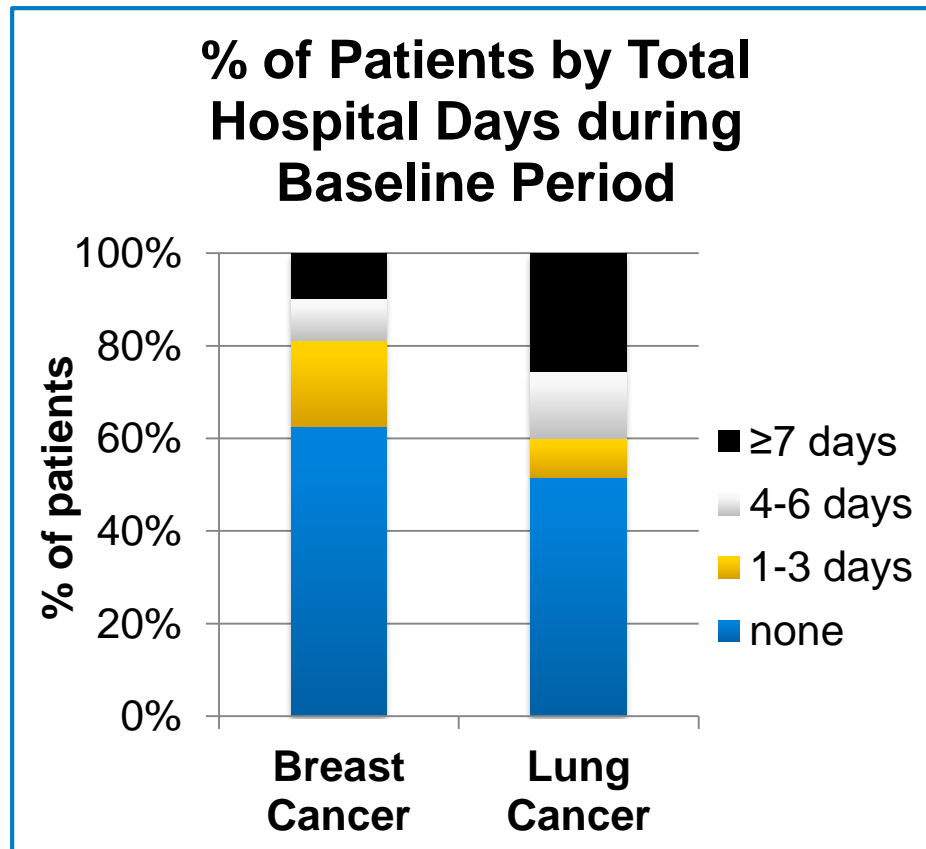
High Risk (N=87)		
Regimen	N pts	%
Topotecan	87	100.0

Majority of Patients less than age 75

Patient characteristics	Breast Cancer		Lung Cancer	
	N	%	N	%
Total patients	1,686	100.0	10,961	100.0
Age (years)				
65-69	434	25.7	2,734	24.9
70-74	475	28.2	3,426	31.3
75-80	388	23.0	2,700	24.6
80+	389	23.1	2,101	19.2
Gender				
Male	20	1.2	5,872	53.6
Female	1,666	98.8	5,089	46.4

High burden of prior hospitalizations

- 62.5% of BC pts. and 51.5% of LC pts. had no prior hospitalizations
- Of the patients with at least one hospitalization:
 - 12.5% (BC) and 14.4% (LC) were hospitalized for infection
 - 10.1% (BC) and 14.9% (LC) with cardiovascular disease

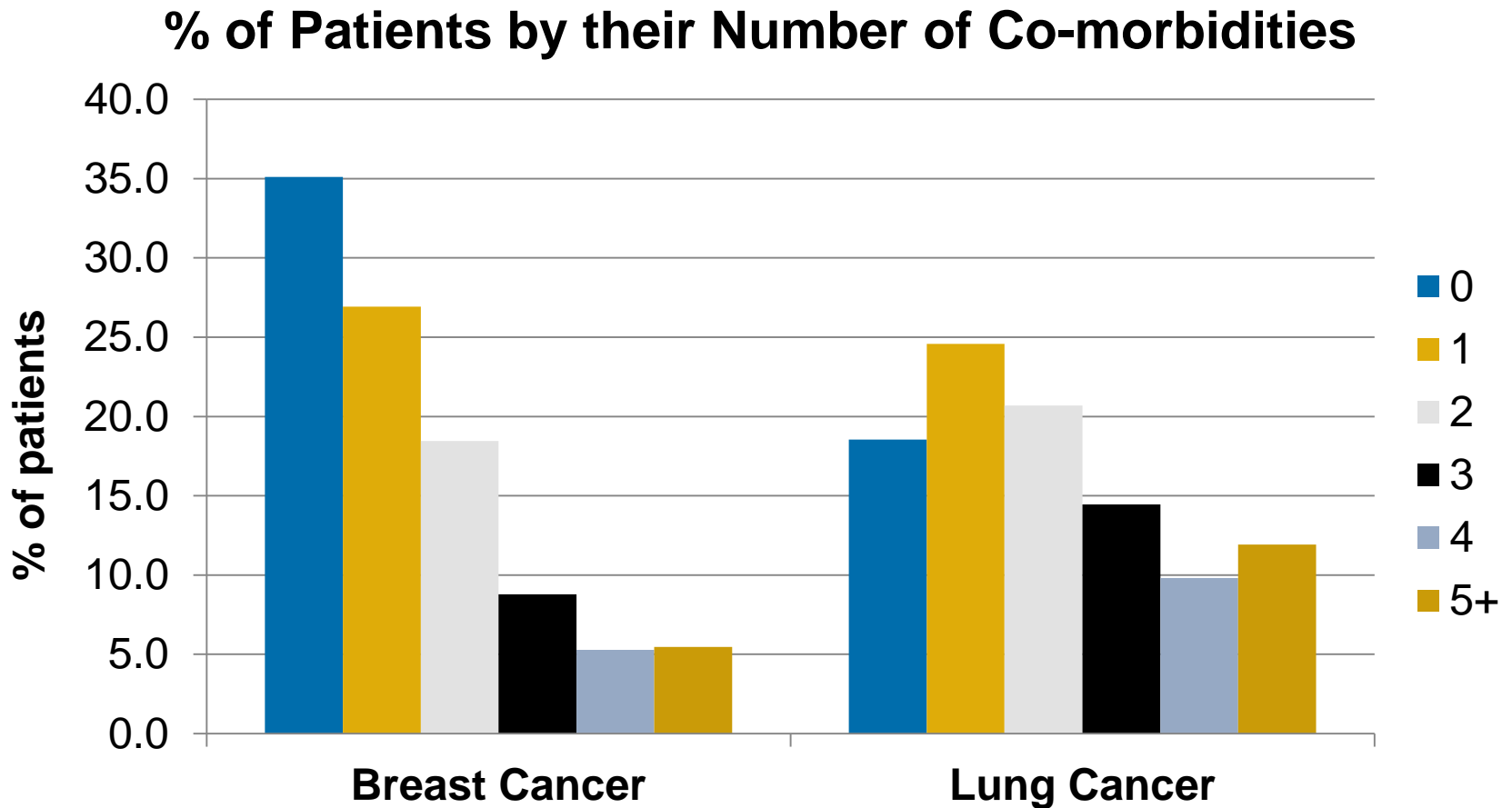


- 9.9% of BC pts. and 25.6% of LC pts. had 7 or more over night hospitalizations

Baseline hospitalizations were defined as at least an overnight stay, during the 6 months prior to chemotherapy initiation.

Co-morbidity Burden is HIGH

17 total co-morbidities were studied



Results – Top 5 Co-morbidities

Breast Cancer Patients	N	%
Total patients	1,686	100.0
Comorbidities		
Diabetes (DM)	389	23.1
Thyroid disease	258	15.3
Anemia	246	14.6
Chronic obstructive lung disease (COPD)	213	12.6
Cardiac Arrhythmia (Dysrhythmia)	212	12.6

Lung Cancer Patients	N	%
Total patients	10,961	100.0
Comorbidities		
Chronic obstructive lung disease (COPD)	5,677	51.8
Atherosclerotic heart disease (ASHD)	2,948	26.9
Diabetes (DM)	2,375	21.7
Cardiac Arrhythmia (Dysrhythmia)	2,076	18.9
Anemia	1,900	17.3

Minority of patients received G-CSF prophylaxis during first chemo cycle

Primary Prophylactic period was defined as day 0 to day 5 of the first cycle of chemotherapy, where day 0 is the start of the cycle.

Primary Prophylactic G-CSF Use	<u>Breast Cancer</u>		<u>Lung Cancer</u>	
	N	%	N	%
Total patients	1,686	100.0	10,961	100.0
Primary prophylactic G-CSF				
yes	200	11.9	2294	20.9
no	1,486	88.1	8,667	79.1

Agent Type used for Prophylaxis	<u>Breast Cancer</u>		<u>Lung Cancer</u>	
	N	%	N	%
N Patients	200	100.0	2,294	100.0
Filgrastim	26	13.0	144	6.3
Sargramostim	*	*	40	1.7
Pegfilgrastim	167	83.5	2110	92.0

* denotes fewer than 11 patients

Conclusions

- Over 60% of elderly patients with BC or LC treated with an IR regimen have a clinically important co-morbidity and over 30% had had at least an overnight hospital admission in the six months prior to chemotherapy