

Falls in the Older Ambulatory Cancer patient

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Problem Statement

- Falls are especially important when pain, fatigue and other symptoms of cancer treatment may enhance the risk in older cancer patients (Holley, 2002).
- Approximately 50% of adults with advanced cancer will fall while hospitalized (Stone et al 2012).
- 17% of cancer patients fall within 6 months of a cancer diagnosis (Puts et al 2012).

Frequently reported risk factors for falls

- Being female (Baker 1992; Tromp 1998).
- Having had a previous fall (AGS 2001; Mackintosh et al 2006).
- Having lower body weakness or gait or balance problems (Nevitt 1989; Lord 1993; AGS 2001; Stalenhoef et al. 2002).
- Having physical limitations (Koski 1996), wearing glasses, or having other visual problems (Ivers 1998; Lord 2001).
- Having more than one chronic disease (Tinetti 1986), history of stroke (Dolinis 1997), Parkinson's Disease (Northridge 1996; Dolinis 1997), neuromuscular disease (Lau 1991), urinary incontinence (Tromp 2001), or postural hypotension (Kario 2001).
- Being cognitively impaired (Tromp 2001).
- Taking more than four medications or using psychoactive medications (Cumming 1998).
- Wearing shoes with thick, soft soles (e.g., jogging shoes) (Robbins 1994).

Purpose Statement

- The purpose of this research was to:
 - understand the extent to which falls occurred,
 - how falls related to depression, age, functional status and cognition,
 - to develop a model for predicting falls in older cancer patients.
 - narratives associated with falls.

Methods

- The Geriatric Depression Scale (GDS) (Yesavage et al., 1982), Mini Mental State Examination (MMSE) (Folstein M., Folstein, & McHugh, 1983), Instrumental Activities of Daily Living (IADL) (Lawton & Brody, 1969), Activities of Daily Living (ADL), (Katz, Downs, Cash, & Grotz, 1970) were scored according to their individual cutpoints.
- Falls were assessed using the American Geriatrics Society guidelines on fall evaluation.

Methods

- Falls, functional status, depression and cognition screening scores were assessed in people aged 70 and over with any diagnosis of cancer and receiving any type of treatment (chemotherapy, radiation therapy, hormonal therapy, observation).

Methods: Sample

- Three samples of older patients:
 - with cancer not receiving chemotherapy;
 - with cancer receiving chemotherapy;
 - without a diagnosis of cancer, receiving care in the USF geriatrics clinics.

Methods: Analysis

- A correlation coefficient and point biserials were used to examine the relationship between age, IADL, ADL, MMSE and GDS and falls.
- Descriptive statistics to assess means
- Regression analysis was used to construct a model to predict falls.

Results: Characteristics of the Sample

	Cancer Non Chemo	Cancer Chemo	General Geriatrics
N	213	87	66
Age (mean)	77.8	76.9	80.1
Sex			
Men	51 (24.2%)	39 (44.8%)	14 (20%)
Women	161 (75.9%)	47 (54%)	52 (80%)
Cancer Dx			
Breast	33.3%		
Colon	25%		
Lymphoma	25%		
Prostate	5.7%		
Leukemia	2.8%		
Gastric	2.9%		
Hepatic	2.9%		
Pancreatic	5.6%		
Falls	49 (23%)	27 (31.4%)	30 (45.5%)

Results: Means and Fall Rates for People Aged 70

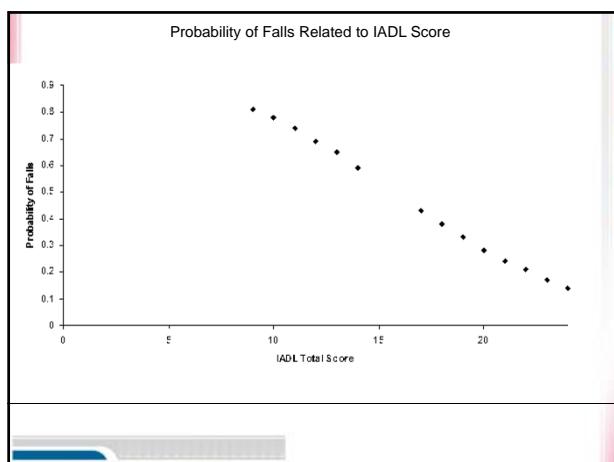
	No Chemo (n=213)	Chemo (n=87)	General Geriatrics(n=59)
ADL	17.5	17.6	16.7
GDS	2.1	2.9	2.4
MMSE	28.4	27.9	25
Age	78	77	80
Falls	23%	32%	45.5%

Predictors of Falls in Older Patients

Variable	B	SE B	β	p
Chemo Group				
Age	-.11	.52	.88	.02
ADL	.84	.33	2.33	.01
IADL	.08	.11	1.08	.48
Gender	.69	.48	2.00	.15
GDS	.07	.09	1.08	.39
MMSE	-.01	.09	.98	.87
Non Chemo Group				
IADL	.26	.07	1.29	.00
GDS	-.12	.05	.88	.02
ADL	.45	.15	1.50	.00
MMSE	.15	.07	1.16	.03
AGE	-.04	.03	.96	.19
Gender	-.30	.36	.73	.40

Correlations and Point Biserials

Variables	Falls	Age	IADL	MMSE	ADL	GDS
Chemo Group						
Falls		.252*	-.129	.017	-.332**	-.093
Age			-.433*	-.094	-.302**	.083
IADL				.042	.706**	-.220
ADL						-.184
Non Chemo Group						
Falls		.090	-.361**	-.155*	-.220**	.164*
Age			-.268**	-.111	-.065	.129
IADL				.517**	.613**	-.509**
ADL						-.289**
General Geriatrics Group						
Falls		.149	-.043	-.070	-.105	.256*
Age			-.337**	-.217	-.322*	.275*
IADL				.712	.741**	-.541*
ADL						-.572**



Falls Narrative Data

The James Ohio State University Comprehensive Cancer Center
designated by the National Cancer Institute

NCI
National Cancer Institute

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Table 1. Characteristics of Sample

	Number of Participants	%
Age (mean 76.4 years, range from 70 to 94 years)		
Sex		
Women	10	50
Men	10	50
ECOG PS		
0	6	30
1	10	50
2	2	10.5
3	1	5.3
Cancer Site		
Breast	9	45
Hematological	6	30
Prostate	2	10
Lung	2	10
Colon	1	5
Cancer Treatment		
Hormonal	6	30
Growth Factors	8	40
None	1	5
Chemotherapy	4	20
Radiation Therapy	1	5

Table 2. Characteristics of Falls

	N	%
Location of Fall		
Home	15	75
Away from Home	5	25
Fear of Falling	5	25
No Fear of Falling	15	75
Changed Behavior	16	80
No Change in Behavior	4	20
Direction of Fall		
Unknown	1	5
Backward	6	30
Forward	11	55
Sideways	2	10

Table 3. Descriptions of Falls

	N	%
Activity the Caused Fall		
Yard work	4	20
Walking outside	4	20
Household chores	3	15
Bathroom	3	15
Walking inside	4	20
Exercising	1	5
Other	1	5
Perception of Cause of Fall		
Physical problems	3	15
Weakness	4	20
Object caused fall	3	15
Don't know	2	10
Medications	1	5
Walking	6	30
Careless	1	5

Table 4. People Receiving Chemotherapy and Not Receiving Chemotherapy

	Chemo n=4	Nonchemo n=15
Location		
Home	4	10
Away		5
Activity		
Yard work	0	4
Walk outside	1	3
Household chores	1	2
Bathroom	0	3
Walking inside	1	3
Exercise	1	0
Contribution to Fall		
Physical	0	3
Weakness	1	3
Object	2	1
Don't Know	0	2
Walking	0	6
Careless	1	0

Figure 1. Structured Interview Questionnaire

- Where were you at the time of your last fall?
- What were you doing at the time of your last fall?
- What do you think contributed to your last fall?
- Did you fall backward or forward?
- Are you taking any vitamins (vitamin D)?
- Do you have a fear of falling?
- Have you changed any habits or activities as a result of your fall?
- What would you do different to avoid a fall?
- Any other information concerning a fall you would like to provide?

Conclusions

- Falls must be individually assessed.
- Poor functional status increases risk of falls.
- Patients undergoing chemotherapy have an increase risk of falls.
- Narrative research suggests that falls occur for many types of causes.