

Prevalence of Comorbid Medical Conditions among Elderly Colorectal Cancer Patients in the National Cancer Data Base and the SEER-Medicare Database

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Background

- The National Cancer Data Base (NCDB) is a national hospital-based cancer registry, jointly sponsored by the American College of Surgeons and American Cancer Society.
- ♣ Approximately 70% of newly diagnosed cancers in the US are captured in the database.
- ♦ In 2003, NCDB began collecting data on comorbidities. Initially, up to six comorbidities per patient could be reported. Beginning in 2006, up to 10 comorbidities per patient could be reported
- Other than comparisons to published estimates of comorbidity levels among cancer patients, there have been no objective assessments of the accuracy of the comorbidity data in the NCDB.

Purpose

To compare the prevalence of Charlson-Deyo comorbid medical conditions among elderly colorectal cancer (CRC) patients in NCDB to the prevalence in a similar population of patients in the SEER-Medicare database.

Study Methods

- Study Population: In the NCDB and SEER-Medicare databases, we selected patients who were age 66 or older, Medicare insured, had first primary invasive CRC diagnosed during 2006-2007, carcinoma histology, AJCC TNM stages I-IV and who resided in counties that exist in both datasets.
- Sample Size: 11,298 NCDB and 16,554 SEER-Medicare
- Identifying comorbid conditions in the NCDB through Unique patient record. No selection required.
- Searching comorbid conditions in 10 fields using ICD-9-CM codes

- Identifying comorbid conditions in SEER-Medicare through
- Selecting a single claim for each patient (two methods)
- Index admission (inpatient)
- Index claim (inpatient, outpatient or physician service claim) Searching comorbid conditions in diagnosis and procedure fields using ICD-9-CM, CPT-4 and HCPCS codes
- Comorbidity score exclusions: Acute myocardial infarction, Congestive heart failure, Cerebrovascular disease, Ulcer disease and AIDS
- Analysis Methods:
- Patient characteristics between two datasets was compared with chisquare statistics
- Comorbidity prevalence was compared with chi-square statistics.
- Charlson-Deyo comorbidity score was compared with t-test.

Results

- CRC Patients in NCDB were more likely to be diagnosed in advanced stage (p<.0001) and in more recent year (p=.0361) than patients in SEER-
 - 24.92% stage I patients in NCDB vs. 26.83% in SEER-Medicare 49.71% patients diagnosed in 2007 in NCDB vs. 48.43% in SEER-Medicare)
- Using the index admission or index claim, the prevalence of the majority (66%) of comorbid conditions in NCDB was not significantly different from the prevalence in SEER-Medicare.
- The prevalence of CHF, chronic pulmonary disease, rheumatologic disease, mild liver disease, and renal disease was significantly lower in NCDB than SEER-Medicare (p<.05).
- Number of patients who did not have any comorbid conditions was greater in NCDB than in SEER-Medicare (p<.0001)
- Comorbidity scores were significantly higher in NCDB than in SEER-Medicare (p<.0001)

Table 1: Prevalence of comorbid conditions

Comorbid Conditions	NCDB	SEER-Medicare Index Admission	SEER-Medicare Index Claim
Myocardial Infarction	527(4.66)	778(4.70)	790(4.77)
CHF	992(8.78)	1854(11.20)***	1859(11.23)***
Peripheral Vascular Disease	271(2.40)	403(2.43)	408(2.46)
Cerebrovascular Disease	146(1.29)	239(1.44)	237(1.43)
Dementia	41(0.36)	70(0.42)	65(0.39)
Chronic Pulmonary Disease	1375(12.17)	2579(9.26)***	2600(15.71)***
Rheumatologic Disease	90(0.80)	181(1.09)*	185(1.12)**
Peptic Ulcer	138(1.22)	183(1.11)	186(1.12)
Mild Liver Disease	77(0.68)	173(1.05)**	172(1.04)**
Diabetes	1754(15.52)	2429(14.67)	2490(15.04)
Diabetes w/ complications	148(1.31)	238(1.44)	241(1.46)
Hemiplegia or Paraplegia	14(0.12)	32(0.19)	32(0.19)
Renal Disease	377(3.34)	766(4.63)***	775(4.68)***
Moderate or Severe Liver Disease	22(0.19)	51(0.31)	49(0.30)
AIDS	2(0.02)	2(0.01)	2(0.01)
No Comorbid	7079(62.66)	9294(56.14)***	9185(55.49)***

Table 2: Comorbidity Score

Comorbidity Score	NCDB	SEER-Medicare Index Admission	SEER-Medicare Index Claim
0	7079(62.66)	10486 (63.34)	10394 (62.79)
1	2689(23.80)	4291 (25.92)	4371 (26.40)
2	993(8.79)	1274 (7.70)	1284 (7.76)
3+	537(4.75)	503 (3.04)	505 (3.05)
Mean	0.5798	0.5143***	0.5207***

*** p<.0001, **p<.01, *p<.05

Conclusion

- Using similar methods, prevalence rates for most Charlson-Deyo comorbid conditions in NCDB were comparable to those in SEER-Medicare
- Limitation: Although the majority of previous studies have assessed comorbid conditions that existed existed 12 months or 24 months prior to cancer diagnosis, such information is not available in the NCDB.

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