Cancer diagnosis as a risk factor for personal bankruptcy

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Background

- The National Institute of Health (NIH) estimates that cancer care costs in 2010 totaled $264 billion. This represents < 10% of our overall healthcare spending of $2.5 trillion per year.
- Although cancer costs do not comprise a large proportion of our overall national health spending, the costs of cancer care are rapidly escalating and the financial burden on individual families is great.
- Cancer patients, even those with insurance, face significant financial stress due to out-of-pocket expenses, insurance premiums, deductibles, and lost wages.
- The risk of bankruptcy for cancer patients has not been formally studied. The risk is likely to vary by cancer type, treatment, and baseline personal financial health, however this relationship is not well characterized.
- This study aimed to identify cancer-specific characteristic predicting for personal bankruptcy.

Methods

- The study cohort was derived from the Surveillance Epidemiology and End Results (SEER) database linked to federal bankruptcy court records within the western district of Washington state (USBC-WSW).
- The linkage was performed using a probabilistic algorithm for matching based on name, sex, residence, and last 4 digits of social security number.
- The cohort included adults > age 20 years with newly diagnosed first primary cancers between 1995-2009.
- In situ cancer, cancer diagnosed at death, and patients with unknown date of diagnosis were excluded.
- The rate of bankruptcy after cancer diagnosis was measured and compared to the rate of bankruptcy in the general population. The conditional probability of personal bankruptcy (i.e. chapter 7 or 13) was calculated, taking into account survival to the time point of analysis.
- Competing risk regression was used for multivariate analysis to identify patient and treatment-specific factors that increased risk for personal bankruptcy among common cancers. The dependant variable was filing of Chapter 7 or 13 bankruptcy, the competing risk was all-cause death, and the time-dependant variable was the onset of Bankruptcy Abuse Prevention and Consumer Protection Act in 2005 (BAPCPA).

Results
231,799 cancer cases were identified.
Mean follow-up was 4.3 years.
4,805 patients, or 2.1%, filed for personal bankruptcy over the study period.
Median time to bankruptcy was 2.5 years.
The trend for bankruptcy over the study period mimics the legal and economic environment of each year. Bankruptcy filings increased dramatically in 2005 just prior to onset of BAPCPA, which caused fear that bankruptcy filings would be more difficult. After this law was enacted, filings decreased until mid-2006 when the U.S. economic crisis began. Bankruptcy filings have steadily increased since that time.
Rates of bankruptcy were assessed at 1 year, 3 years, and 5 years following diagnosis for a variety of cancers.
Generally, the rate of bankruptcy increased with time since diagnosis in all cancers examined.
The highest rates of bankruptcy were seen in lung cancer, thyroid cancer, leukemia/lymphoma, uterine cancer, and colorectal cancer. Additional risk of bankruptcy was seen in patients with lung, colorectal, and breast cancer receiving surgery and chemotherapy.
On multivariate analysis, factors significantly associated with lower likelihood of bankruptcy included female gender (HR 0.75; lung cancer only), marriage (HR 0.61; breast cancer only), and filing after BAPCPA (HR 0.31-0.42). Age ≥ 65 years at diagnosis was protective against bankruptcy for all cancers (HR 0.3-0.5). Regional stage at diagnosis conferred a higher risk of bankruptcy (HR1.32-1.77).

| Conditional probability of bankruptcy filings in years following cancer diagnosis |
|---------------------------------|----------|----------|----------|
|                                 | 1 year   | 2 years  | 3 years  |
| Lung                            | 1.5%     | 3.1%     | 7.7%     |
| Thyroid                         | 0.9%     | 2.0%     | 4.8%     |
| Leukemia/lymphoma               | 0.6%     | 1.4%     | 3.6%     |

Authors' Conclusions

- A diagnosis of cancer poses a particular risk for personal bankruptcy, especially for patients with lung cancer, thyroid cancer, and leukemia/lymphoma.
- Risk of bankruptcy increases as time from survival increases. The average rate was 0.5% at year 1 and 1.9% at year 5 after diagnosis.
- Patients over age 65, who are typically on Medicare, have a much lower risk of bankruptcy than younger patients.
- The BAPCPA greatly influenced the timing of filings immediately before and after enactment.
- Bankruptcy filings of cancer patients have increased in the recent economic crisis, indicating the increased financial hardship for cancer patients.

Implications

- This study is one of the first and largest studies investigating the risk of personal bankruptcy in cancer patients.
• Although the absolute risk of bankruptcy is small, it is increasing, particularly in our current economic climate.

• The study has several notable limitations:
  • No control group is available to make a comparison about the additional financial risk the cancer diagnosis adds
  • Pre-illness debt and income information is not available
  • No detailed treatment information is available
  • The cohort is restricted to one state and may not reflect bankruptcy rates across the U.S.
  • As with many large administrative database studies, the data obtained here is subject to multiple unknown influences and no patient or physician preference data is available

• The work represents a major advance in quantifying the great financial burden patients incur after receiving a cancer diagnosis and undergoing treatment.

• Future directions include studying bankruptcy rates nationwide and devising methods to address financial burden with at-risk patient groups.

• Furthermore, prospective clinical trials and comparative effectiveness research can provide tools for assessing value and the economic impact of various treatments on outcomes.

• The study has profound implications for public health, health policy, and health care reform. Additionally, oncologists need to address patient financial burdens and priorities on an individual level in order to facilitate care in the manner that is most feasible economically for a given patient.