BACKGROUND

Over 55,000 patients are diagnosed with pancreatic cancer each year in the U.S. The prognosis is very poor, with 5-year survival at 9% (ACS, 2019).

The aggregate health economic implications of pancreatic cancer are poorly understood, especially from the patient perspective.

As a preliminary effort, we sought to better understand changes in type and quantity of medical expenditures over time, along with quality of life related costs, from this perspective.

This preliminary research is part of a larger effort to understand how the introduction of new treatments affect this perspective.

We analyzed patient-level data from the Medical Expenditure Panel Survey (MEPS, 1996 – 2017). MEPS data are derived from a set of large-scale surveys of families and individuals, medical providers and employers across the US on the type, frequency and cost of health services used. All analyses were performed using R version 3.6.1 on Ubuntu 19.04.

Averages were computed for the total health care costs, including prescription drug costs for the period between 2009 – 2016 to include approval and use of (nab)paclitaxel, FOLFIRINOX and erlotinib.

Average individual annual cost estimates for the second year excluded individuals that were identified as having died prior to the first round of data collection in the second year. Interpretation of results may be limited by a relatively small sample size and may not be generalizable to specific demographic groups.

The individual patient level ratios of prescription drug cost to other medical expenses was also computed.

All costs are expressed in inflation adjusted 2012 USD.

Included subjects (n=80) had a diagnosis of pancreatic cancer and available prescription data. Individual age and employment status were accounted for as covariates.

METHODS

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RESULTS

Table 2 (above) shows mean inflation-adjusted patient level healthcare costs for patients with pancreatic cancer in the MEPS database.

The few previous studies about the total cost of pancreatic cancer care have looked at the average dollars spent during a specific period of time. We replicated this approach and found that total pancreatic cancer care costs averaged about $87,000 during the 1996-2017 time period, which is consistent with the findings of other analyses (Bao et al., 2012; O’Neill et al., 2012).

However, such analyses are skewed by the fact that a small percentage of patients generate most of the cost. In this study, we attempt to capture statistically significant changes in spending and identify factors associated with such shifts.

DISCUSSION

As noted, this preliminary study suggests that the therapeutic benefit of increasing the use of prescription drugs is so great that it is driving a decrease in the actual cost of healthcare. This study period corresponds to the introduction of more effective, multi-agent chemotherapies for pancreatic cancer, such as gemcitabine/Abraxane and FOLFIRINOX.

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CONCLUSIONS

For every additional dollar spent on drugs for pancreatic cancer between 2009 and 2016, there was a reduction in non-drug spending of $8 – $9. This relationship is consistent with several other studies that have found the cost of medications to be a small percentage of total cost of care (Lichtenberg, 2018). The decline is directly related to a reduction in hospitalizations and emergency visits.

This preliminary study suggests that frequency or cost of necessary procedures is markedly reduced by allotting budget towards better pharmacotherapy.

Development of more effective, better tolerated therapies for pancreatic cancer could lead to further decreases in the total cost of care and will also address the urgent patient need for additional treatments.

As even more therapies for pancreatic cancer have been developed in the past few years, it would be beneficial to conduct an update to this research periodically.

REFERENCES


