Treatment for Colorectal Cancer in Washington State Costs Twice as Much as in Neighboring Area of Canada, Despite No Difference in Survival

ASCO Perspective

“This study adds important context to the ongoing national conversation about rising treatment costs. As oncologists, we see the burden of high costs on patients and their families every day. In fact, as ASCO’s National Cancer Opinion Survey shows, many patients even forgo, delay or skimp on treatments due to costs, potentially compromising their effectiveness,” said ASCO Chief Medical Officer Richard Schilsky, MD, FACP, FASCO.

CHICAGO – An analysis of health claims data from two demographically similar regions on either side of the U.S. and Canada border shows that a common treatment for advanced colorectal cancer costs twice as much in Western Washington State (WW) than in British Columbia (BC) -- $12,345 vs. $6,195 monthly per patient. Despite the higher cost, the patients on the U.S. side of the border are not living longer than those on the Canadian side.

The study will be featured in a press briefing today and presented at the 2018 American Society of Clinical Oncology (ASCO) Annual Meeting.

“To our knowledge, this is the first study to directly compare treatment cost and use, along with health outcomes, in two similar populations treated in different health care models,” said lead study author Todd Yezefski, MD, a senior fellow at the Fred Hutchinson Cancer Research Center in Seattle and the University of Washington School of Medicine. “Understanding these differences may help us improve care and potentially lower health care costs.”

About the study
To focus on differences in health care systems (single payer in Canada vs. both private insurance and government-run programs in the U.S.), researchers selected two regions that are demographically similar. In addition to being geographically close, British Columbia and Western Washington State both have a mostly white population, with a large Asian minority. They are also similar in income level and education.

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Initial systemic treatments for advanced colorectal cancer are also similar in the two countries, although the specific treatment regimen typically used is different in Canada than in the United States, but they both provide the same benefit to patients.

The analysis included 1,622 patients with metastatic colorectal cancer in BC and 575 in WW. In the analysis, patients in BC were older than those in WW (median age 66 years vs. 60 years). Dr. Yezefski noted that this difference is due to the researchers not being able to access claims data for Medicare patients in the U.S. The most common initial systemic treatment in BC was FOLFIRI (irinotecan, 5-fluorouracil, and folinic acid) chemotherapy with bevacizumab (Avastin). In WW, most patients received FOLFOX (oxaliplatin, 5-fluorouracil, and folinic acid) chemotherapy.

**Key findings**
Researchers found differences in both treatment use and costs, but not in survival. Overall, more patients in WW than in BC received initial systemic treatment (79% vs. 68%). Dr. Yezefski noted that this may be because the patients in WW were younger, on average.

The mean monthly, per patient cost of initial treatment was significantly higher in WW than in BC ($12,345 vs. $6,195).

There were no differences in median overall survival between the two regions among those receiving systemic treatment and those not receiving treatment. Among those receiving systemic treatment, the median overall survival was 21.4 months in WW and 22.1 months in BC. Among patients who did not receive systemic treatment, the median survival was 5.4 months in WW vs. 6.3 months in BC.

**Next steps**
The researchers plan to expand this analysis to include claims data from older patients in WW. The authors noted that the current analysis is skewed towards younger patients who are not insured through Medicare. They also hope to compare utilization and costs of other common treatments for colorectal cancer, such as radiation therapy and surgery.

“This study is a first step in an effort to understand the complexities influencing cancer care costs and outcomes in these two regions. Our goal at HICOR is to collect and share data that will bring about improved care while addressing the rising costs of cancer,” said Dr. Veena Shankaran, the study’s principal investigator and an associate member at Fred Hutch.

More research is also needed to determine if there are any differences in quality of life and symptom burden between different populations. This is beyond the scope of this study, however, as such information is not included in health claims data.

This study received funding from the Fred Hutchinson Cancer Research Center and BC Cancer Agency.
Comparison of chemotherapy use, cost, and survival in patients with metastatic colorectal cancer in Western Washington State, USA vs. British Columbia, Canada.

**Background:** Few studies have directly compared health care utilization, costs, and outcomes between geographically similar patients (pts) treated in the US’ multi-payer health system versus Canada’s single-payer system. Using cancer registry and claims data, we assessed systemic therapy (ST) use, cost, and survival for metastatic colorectal cancer (mCRC) pts in Western Washington (WW) and British Columbia (BC).
Methods: Pts age ≥ 18 diagnosed with mCRC in 2010 and later were identified from 1) the BC Cancer Agency database and 2) a regional database linking WW SEER to claims from two large commercial insurers. Demographic and treatment characteristics for the two populations were compared using two-sample t tests. ST costs (first-line and lifetime) were expressed as mean per patient per month costs; Canadian costs were expressed in US dollars using the Purchasing Power Parity for Health in 2009. Median survival was reported for both populations. Results: 1622 BC pts and 575 WW pts were included in the analysis. BC pts were more likely to be older (median age 60 vs 66) and male (57% vs 48%, p = < 0.01). A greater proportion of WW versus BC pts received ST (79% vs. 68%, p < 0.01). FOLFIRI plus bevacizumab was the most common first-line regimen in BC (32%) while FOLFOX was the most common first-line regimen in WW (39%). The mean monthly cost of first-line therapy per patient was significantly higher in WW than BC ($12,345 vs $6,195, p = < 0.01), and this was true for all regimens assessed. Mean lifetime monthly ST costs were significantly higher in WW ($7,883 vs $4,830, p = < 0.01). There was no difference in median overall survival between populations among those receiving ST (21.4 months (95% CI 18.0-26.2) in WW and 22.1 months (20.5-23.7) in BC) or among those not receiving ST (5.4 months (2.4-7.7) WW versus 6.3 months (5.2-7.3) BC). Conclusions: Utilization and cost of ST for mCRC was significantly higher for patients in WW compared to BC without differences in overall survival in treated and untreated patients.

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