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Original article

Specialist visits and initiation of cancer-directed treatment among a large cohort of men diagnosed with prostate cancer

Eberechukwu Onukwugha, M.S., Ph.D.[a,*], Candice Yong, Ph.D.[a], Michael Naslund, M.D.[b], Corinne Woods, R.Ph., M.P.H.[a], C. Daniel Mullins, Ph.D.[a], Brian Seal, R.Ph., M.B.A. Ph.D.[c], Arif Hussain, M.D.[d,e]

[a] *Department of Pharmaceutical Health Services Research, University of Maryland School of Pharmacy, Baltimore, MD*
[b] *Department of Surgery, University of Maryland School of Medicine, Baltimore, MD*
[c] *Bayer HealthCare Pharmaceuticals, Inc., Whippany, NJ*
[d] *Marlene and Stewart Greenebaum Cancer Center, University of Maryland School of Medicine, Baltimore, MD*
[e] *Veterans Affairs Medical Center, Baltimore, MD*

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Abstract

Background: The urologist generally manages the treatment of men immediately following the diagnosis of prostate cancer (PCa). The role of other physician specialists in this setting is less clear. We investigated whether involvement of other physician specialty types immediately following diagnosis affects initiation of cancer-directed treatment.

Methods: This is a retrospective cohort study using linked cancer registry and claims data from 1999 to 2009, excluding stage I/II PCa. A physician visit index (PVI) served as the exposure variable and captured the "dispersion of care" across specialties, that is, the extent to which patient care involved different types of physician specialties such as the primary care physician, urologist, or oncologist. The PVI score was calculated using visits occurring within 30 days postdiagnosis. This score was dichotomized to measure "low PVI" (reflects seeing multiple specialist types). Competing risk Cox proportional hazard regression models provided adjusted hazard ratios (HR) for treatment receipt associated with a low PVI.

Results: The sample included 33,380 patients: 4,910 metastatic and 28,470 nonmetastatic groups. The top 3 visit categories within 30 days postdiagnosis were "urologist only" (59%) and "urologist plus primary care physician" (21%) and no visit (6%). The median time to receipt of cancer-directed treatment was 51 days. Overall, 29% of individuals in the metastatic group and 38% in the nonmetastatic group were categorized as low PVI. A low PVI was associated with a shorter time to treatment receipt in the nonmetastatic (HR = 1.12 [95% CI: 1.09–1.15]) and metastatic (HR = 1.21 [95% CI: 1.14–1.29]) groups.

Conclusions: Multispecialist involvement in the weeks following diagnosis is associated with a shorter time to treatment initiation, highlighting a role for exposure to different specialty types in the weeks following an initial diagnosis of PCa. This study provides important baseline data for future studies examining coordination of care across cancer and noncancer specialists.

Keywords: Prostate cancer; Cohort study; Claims data; Urologist; Oncologist; Primary care physician; Physician visit; Treatment

1. Introduction

The effect of prostate cancer (PCa) on men and the health care system is often measured by the clinical and economic burden associated with the disease [1]. Less attention is paid in investigating physician-patient contact in the period immediately following diagnosis. This period can be particularly tumultuous for the patient, as he copes not only with the medical and psychosocial consequences of receiving a cancer diagnosis but also with making treatment decisions [2–7]. Following diagnosis, physician contact enhances patient engagement in the care process and ensures access to appropriate, evidence-based information [8,9].

* Corresponding author. Tel.: +1-410-706-8981; fax: +1-410-706-5394.
E-mail address: eonukwug@rx.umaryland.edu (E. Onukwugha).

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With continued developments in treatment options for men diagnosed with PCa, comprehensive cancer care requires a multidisciplinary team approach involving urologists, radiation oncologists, and medical oncologists [10]. Through contact with different specialists who have their own areas of expertise with respect to the specific types of treatment modalities they can provide, patients have the opportunity to receive a balanced perspective on the risks and benefits of all available treatment options during the treatment decision-making process. Although multidisciplinary evaluation and treatment counseling at a single location within the same day may be considered the ideal approach to care [11–14], patients diagnosed with PCa may see more than one specialist on different days or at different institutions.

The interaction with multiple specialists can be measured by the "dispersion of care" across specialties, that is, the extent to which patient care involves different types of physician specialties [15]. Some studies suggest that increased dispersion of care can improve patient health if care is coordinated and information is exchanged among physicians [16]. Previous studies characterizing physician visit patterns among patients with PCa have focused on urologists, radiation oncologists, and medical oncologists [8,9]. In addition to these specialists, patients may also require postdiagnosis care from primary care physicians (PCPs), psychiatry/mental health specialists, and in some cases perhaps even nuclear medicine physicians. Earlier timing of physician visits can influence outcomes such as the types of treatments received [8,9]. We sought to determine whether exposure to multiple specialist types in the period following diagnosis is associated with a shorter time to treatment receipt. The relationship between timing of physician visits and timing of treatment receipt has not been investigated, nor has the role of PCPs been described among men diagnosed with metastatic PCa, most of whom will be candidates for some form of treatment.

We undertook the present study in an effort to better understand patterns of care across physician specialties, as well as determine the effect of specialist visit patterns on the types and timing of cancer treatments received by patients once their diagnosis was established. In addition to including the traditional specialists involved in the care of patients with PCa (urologists, radiation oncologists, and medical oncologists), this study is novel in that it also evaluated the role of PCPs and mental health practitioners. Further, this study uses an index, termed the "physician visit index (PVI)," to measure the extent to which a single specialty type (vs. multiple specialty types) is responsible for managing the patient. We explored whether postdiagnosis contact with 2 or more physician specialty types (including urologists, oncologists, PCPs, and mental health practitioners) in the weeks following diagnosis is associated with a greater likelihood of cancer-directed treatment receipt compared to contact with only 1 type of specialist. Although this study focuses on men diagnosed with PCa, our work is also potentially relevant to other common cancers such as those of the lung, breast, or colon, among others, where patients may receive multimodal therapy and interact with multiple physician specialties.

2. Methods

2.1. Data source and study sample

This was a retrospective analysis of linked Surveillance, Epidemiology and End Results cancer registry and Medicare claims (SEER-Medicare) data. The study sample included men aged 66 and older diagnosed with PCa during 2000 through 2007, as identified by the American Joint Committee on Cancer Tumor-Node-Metastasis (AJCC-TNM) stage, sixth edition [17]. Claims data from 1999 to 2009 were extracted from linked Medicare claims files to capture visits with cancer specialists and other health care providers around the time of diagnosis. Continuous enrollment in Medicare Parts A and B during the 12 months prior to and including the month of diagnosis was also an inclusion criterion. Exclusion criteria were (1) diagnosis of stage I or II PCa in order to exclude men for whom active surveillance may also be a treatment option, given our inability to identify active surveillance using claims data; (2) health maintenance organization enrollment during the 12 months prior to and including the month of diagnosis, as health maintenance organization claims can be unreliable owing to missing data; (3) history of other cancers (excluding nonmelanoma skin cancer) within 5 years before PCa diagnosis; and (4) diagnosis of PCa during autopsy. This study was approved by the University of Maryland Baltimore Institutional Review Board (HP-00049426).

2.2. Study measures

Physician visits were identified using Medicare claims from the Carrier Claims (National Claims History) and Outpatient files. We examined postdiagnosis visits with PCa-related specialists, including urologists, radiation oncologists, medical oncologists, and nuclear medicine physicians, as well as visits with other health care providers, including PCPs and mental health practitioners.

The "PVI" has been used previously to characterize physician visit patterns and is similar to other continuity of care indices [18–20]. A subtle difference compared to continuity of care indices is that the PVI is used as a measure of "concentration" based on specialty type and not based on individual physicians. As shown in Fig. 1, the PVI was calculated by summing the squared shares of the patient's total physician visits for each physician specialty type visited during the time period of interest. The PVI reflects the number of different specialties involved in the patient's care as well as the number of visits to the different specialties. The PVI ranges from 0 to 1. The closer the