SCH Salud y Conducta Humana

Abstract

PHSU PONCE HEALTH SCIENCES UNIVERSITY · School of Behavioral · and Brain Sciences

Demographic, Social, and Clinical Factors Associated with Kidney Cancer Treatment Delays in Puerto Rico, 2023-2025

Michael A. Jimenez-Carreras, Surya Narukullapati, Glorianne González-Nieves, Nicole M. Muñoz-Berastaín, José A. Oliveras-Torres

Ponce Health Sciences University, Ponce, Puerto Rico.

ABSTRACT

Introduction. Timely initiation of kidney cancer treatment is essential for optimal cancer care. In Puerto Rico, kidney cancer has an age-adjusted incidence rate of 6.9 per 100,000 population. However, limited evidence exists regarding demographic and clinical factors associated with diagnosis-to-treatment (DTT) intervals. Understanding these factors may help identify potential barriers to timely cancer care. **Objective.** To evaluate demographic, clinical, and geographic factors associated with diagnosis-to-treatment (DTT) among kidney cancer patients in Puerto Rico. **Method.** A retrospective secondary analysis was conducted among 91 kidney cancer patients recruited through the Puerto Rico BioBank between 2023 and 2025. DTT intervals were evaluated in relation to demographic, clinical, and geographic factors using nonparametric tests, correlations, and multivariable regression (95% CI; $p < 0.05$) in SPSS Version 32. Social vulnerability and geographic patterns were assessed using the Social Vulnerability Index (SVI) and ArcGIS. A patient-centered digital navigation prototype, *Mi Ruta de Cuidado*, was subsequently developed as a proposed community intervention. **Results.** Median DTT was 113 days (IQR: 71-153), with 62.6% experiencing delays of ≥90 days. Partial nephrectomy had a longer median DTT than radical/other nephrectomy (128 vs. 93 days; $p=0.030$). Larger tumor size was weakly associated with shorter DTT ($\rho=-0.225$, $p=0.039$). Publicly insured patients had longer median DTT than privately insured patients (128 vs. 95 days; $p=0.081$). Analysis incorporating SVI and ArcGIS are still under revision. These findings informed the development of Mi Ruta de Cuidado, designed to support care coordination, appointment organization, identification of healthcare access barriers, and navigation through the treatment pathway. **Conclusions.** DTT delays were common in this cohort. Associations with surgery type and tumor size weakened after adjustment, while public insurance showed a pattern toward longer DTT. Future publications will incorporate geographic distribution and SVI to further explore structural barriers to timely treatment, while larger samples and broader catchment areas may improve assessment of these disparities. Future research will pilot-test Mi Ruta de Cuidado to evaluate its usability, acceptability, and feasibility as a strategy to support timely kidney cancer care in Puerto Rico.

Keywords: Diagnosis-to-Treatment Time, Kidney Cancer, Social Determinants of Health, Access to Cancer Care, Patient Navigation