Postoperative Outcomes in Gynecologic Oncology: The Role of Social Determinants of Health

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Objectives

Gynecologic cancers present unique challenges in care, with postoperative outcomes influenced by many factors. Implementation of Enhanced Recovery After Surgery (ERAS) has improved postoperative outcomes. However, social determinants of health (SDOH) are increasingly recognized as key contributors to disparities in surgical outcomes, especially among vulnerable populations. This study aims to evaluate the impact of SDOH on postoperative outcomes in gynecologic oncology patients.

Methods

This retrospective study includes 1,070 patients who underwent gynecologic oncology surgeries at a single large academic institution between January 2019 and December 2023. Sociodemographic and clinical data were extracted from the patients' electronic medical records. The Social Vulnerability Index (SVI) was calculated for each patient using ZIP-code-based data to evaluate social determinants of health. Baseline clinical data included the modified frailty index (mFI-5), determined by five comorbidities: congestive heart failure, chronic obstructive pulmonary disease, hypertension, diabetes, and functional status. Surgical outcomes assessed were length of hospital stay (LOS), emergency room (ER) visits, hospital readmissions, non-home discharges, and postoperative complications, classified according to the Clavien-Dindo system. The data were analyzed using negative binomial regression and binomial regression.

Results

The median age of the patients was 53 years (IQR: 43–65), with 23.4% categorized as elderly (>65 years). The racial/ethnic composition included 46.6% White, 24.7% Black, 7.9% Asian, & 10.2% Hispanic patients. Private insurance was the most common type of coverage (52.6%). The median LOS was 2 days (IQR: 1–3). ER visits occurred in 9.6% of patients, while 7.2% were readmitted within 30 days, & 2.4% required non-home discharge. Postoperative complications were observed in 33.1% of patients, with 25.1% classified as Clavien-Dindo grade 3 or higher. Elderly patients had significantly longer LOS (OR=1.16, 95% CI=1.01–1.34) & higher mFI-5 scores (OR=3.46, 95% CI=2.54–4.71). Black patients had longer LOS (OR=1.4, 95% CI=1.21–1.64) & higher rates of complications (OR=1.58, 95% CI=1.15–2.16). Medicaid & Self-Pay patients had longer LOS (OR=1.41 & OR=1.69, respectively) & higher complication rates (OR=1.72 & OR=2.04, respectively), with Self-Pay patients experiencing 2.26 times higher rates of severe complications (95% CI=1.07–4.80). Several SVI domains were significantly associated with poor postoperative outcomes. Risk of hospital readmissions, higher ER visits within 30 days, non-home discharges, & higher mFI-5 scores were associated with higher vulnerability within several of SVI domains. Overall SVI domains were linked to higher ER visits, non-home discharges, & higher mFI-5 scores.

Conclusions

Our findings demonstrate that SDOH significantly impacts postoperative outcomes in gynecologic oncology patients. The associations found between SDOH domains and worse outcomes highlight the need for comprehensive interventions that address social vulnerabilities. Implementing targeted screening for high-risk patients based on socioeconomic, housing, and racial/ethnic factors could help identify those at greater risk and prevent adverse outcomes. Additionally, tailored strategies, including enhanced postoperative support and access to resources in underserved communities, could mitigate these disparities and improve surgical outcomes.

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