Perioperative Complications in Elderly Patients Undergoing Hysterectomy for Gynecologic Malignancies

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INTRODUCTION

Due to improvements in healthcare and an aging baby boomer population, life expectancy and the proportion of elderly individuals in the population are expected to increase in the coming decades. Similarly, as elderly individuals often have age-related diseases, the shifting of the population distribution is anticipated to effect an increase in cancer diagnoses, including those of gynecologic origin. While previous studies on patient selection and surgical candidacy may have encouraged conservative or palliative management for elderly patients with a diagnosis of malignancy due to concerns over physiologic frailty, studies on practice patterns demonstrate that patients above the age of 80 years are increasingly undergoing major abdominal cancer resections. Looking forward, gynecologic oncology providers will be increasingly faced with the prospect of performing surgery on elderly oncology patients. Though the trend in operative management of elderly patients has been previously described, the perioperative comorbidities in gynecologic cancer surgery remained poorly quantified in this population.

OBJECTIVE

This study compares the patterns of complications from hysterectomy performed for gynecologic malignancies between patients younger and older than 80 years of age (defined in this study as the elderly population) using the National Inpatient Sample (NIS) Database, the largest publicly available all-payer inpatient care database in the United States.

METHODS

Admissions of patients with gynecologic malignancies who underwent hysterectomy for gynecologic malignancies between patients younger and older than 80 years of age were identified from the 2007-2014 NIS data sets. The sample was stratified by age greater and less than 80 years. ICD-9 codes for circulatory, pulmonary, genitourinary, and wound-related morbidities were used to identify perioperative complications. Two-sample T-tests and χ² tests were used to compare the type of hysterectomy performed, length of stay, complication rates, and mortality rate. For the purpose of this study, perioperative complications are defined as those occurring in the same admission as the surgery, and perioperative mortality is defined as a surgical admission ending in patient death. P value < 0.05 was considered to be statistically significant. All statistical analysis was performed using SAS Studio University Edition 3.7.

RESULTS

- 68,521 total admissions; 4,665 patients ≥80 years old, 63,856 patients <80 years old
- Elderly patients were more likely to undergo minimally invasive procedures (25.3% vs. 23.7%, P < 0.01) and had a higher average length of stay (4.8 vs. 3.5 days, P < 0.01)
- Increased rate of cardiovascular (12.0% vs. 7.4%, P < 0.01), respiratory (8.9% vs. 5.3%, P < 0.01), gastrointestinal (3.9% vs. 2.0%, P < 0.01), renal (5.2% vs. 2.5%, P < 0.01), and neurologic (0.3% vs. 0.1%, P < 0.01) complications, and perioperative mortality (1.2% vs. 0.3%, P < 0.01)
- Rates of wound/ infectious complications did not differ between groups

CONCLUSIONS

- Despite an increased rate of minimally invasive procedures, elderly patients undergoing hysterectomy for gynecologic malignancy have a higher mortality risk, complication rate, and length of stay.
- The absolute difference in complication rates, length of stay, and immediate perioperative mortality between the geriatric and general cohorts is comparably small.
- Appropriate individualized counseling remains key in determining the optimal treatment modality in the elderly population.
- Usage of the NIS provides the advantage of significant statistical power but does not allow this study to capture data from readmissions. Additionally, data validity depends on coding accuracy, and the diagnosis input method does not delineate temporal relationships between diagnoses, which may lead to an overestimation of complication rates.

REFERENCES


Figure 1. Comparison of Mortality and Complication Rates