Trends and Factors Associated with Cost of Hospitalization in Ovarian Cancer Cytoreductive Surgery: A National Perspective

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Topic: Financial Toxicity and Disparities

Objectives
To characterize the association of cytoreductive surgery (CRS) extent on inpatient hospitalization costs for the treatment of advanced ovarian cancer at the national level.

Methods
All elective adult (> 18 years) hospitalizations for advanced ovarian cancer CRS were tabulated using the 2010-2018 Nationwide Readmission Database. Operative cases were categorized as simple pelvic (SP), extensive pelvic (EP) and radical upper abdominal (RUA). Patient, hospital and operative characteristics including perioperative complications were tabulated. Temporal trends were assessed using Cuzick rank-based, non-parametric test. Multivariable regression models were developed to assess the association between covariates and outcomes of interest with the incremental increase in patient-level cost reported as beta coefficient (β).

Results
Of an estimated 150,118 hospitalizations meeting inclusion criteria, 120,501 (80.3%) underwent SP, 19,945 (13.3%) EP and 9,672 (6.4%) RUA procedures. The mean cost of hospitalization decreased significantly over the study period for each operative type (SP $18,400 to $17,800, EP $34,900 to $27,500, RUA $40,300 to $27,700, NPtrend< 0.001) as did length of stay (SP 5.8 to 4.5 days, EP 10.7 to 7.8 days, RUA 9.0 to 6.1 days, NPtrend< 0.001). On multivariate analysis, factors associated with hospitalization cost included operative type (EP β:+$7,300, 95% CI 3,800-10,800; RUA β:+$7,400, 95% CI 2,400-12,400, ref:SP) and perioperative complications (β:+$10,100, 95% CI 6,700-13,400). Among all operative types, RUA had the highest proportion of complications (RUA 44.4% vs. EP 25.8% vs. SP 13.3%, p< 0.001). Within each cohort, GI-related complications were the most common (SP 17.2%, EP 30.7%, RUA 18.4%, p< 0.001) followed by infectious (SP 4.4%, EP 10.2%, RUA 16.7%, p< 0.001). Of the most common perioperative complications, infectious complications had the greatest impact on cost (β:+$14,111, 95% CI 9,900-18,300) and LOS (β:+6.3 days, 95% CI 4.7-7.9).

Conclusions
Surgical complexity and perioperative complications were the main contributors of hospitalization cost for patients undergoing CRS for ovarian cancer. While cost and LOS decreased significantly over time, these findings emphasize the need to identify perioperative interventions that result in improved healthcare utilization and clinical outcomes.

Abstract Table or Graph
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