The Impact of Alvimopan on Hospital Cost After Bowel Resection: Results From a Large Inpatient Database

Sara Poston, PharmD1, Michael S. Broder, MD, MSHS2, Melinda Maggard Gibbons, MD3, Robert MacLaren, PharmD4, Eunice Chang, PhD5, Christine J. VandePol MD6, Suzanne F. Cook, PhD7, and Lee Techner, DPM8

1GlaxoSmithKline, Research Triangle Park, North Carolina, 2Partnership for Health Analytic Research, LLC, Beverly Hills, California, 3UCLA Center for Surgical Outcomes and Quality, Los Angeles, California, 4University of Colorado School of Pharmacy, Aurora, Colorado, 5EPharma Consulting, Inc. Wayne, Pennsylvania, 6Adolfo Corporation, Exton, Pennsylvania

ABSTRACT

Purpose: Delayed gastrointestinal (GI) recovery after bowel resection is associated with increased length of stay (LOS) and cost. Alvimopan, a peripherally-acting mu-opioid receptor antagonist, has been shown to accelerate GI recovery, thereby reducing hospital costs and LOS. We undertook a retrospective analysis of a large inpatient database to evaluate the impact of alvimopan on hospital cost after bowel resection.

Methods: We conducted a retrospective matched cohort study using data from a large national inpatient database. We identified adults who had bowel surgery with primary anastomosis, who were discharged between 1/1/2009 and 6/30/2009, and had surgery at an academic (E.A.S.E.) center or at hospitals with an alvimopan pharmacy. The primary outcome was total hospital cost. The secondary outcome was hospital costs and LOS. 703 patients were included in the analysis. The primary analysis compared total hospital cost in patients treated with alvimopan (N=480; 33.3%) and nonusers (N=223; 15.0%) using pharmacy charges.

Results: Alvimopan users had lower total hospital costs (mean $1,040 vs. mean $1,102; P<.001) and shorter lengths of stay (mean 5.6 vs. mean 6.5 days; P=.001). The results were consistent after controlling for baseline characteristics. Hospital costs were reduced in patients treated with alvimopan compared to a propensity score–matched control group, even after accounting for residual differences between groups or in another analysis that stratified by case volume.

CONCLUSION

Alvimopan users had lower total hospital costs and shorter length of stay than controls. After adjusting for covariates, alvimopan use was associated with reduced costs.

Limitations

- Patients treated with alvimopan had mean total hospital costs of $1,040, less than a propensity score–matched control group; even after accounting for the cost of the medication.
- Hospital stay was nearly a full day shorter among alvimopan users compared with controls.
- The direction and magnitude of the cost savings and LOS reduction were similar to effects reported in clinical trials.

The Checklist Manifesto: How to Get Things Right

The Checklist Manifesto: how to get things right

REFERENCES