The clinical utility of postoperative hemoglobin and creatinine after surgery for pelvic organ prolapse

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OBJECTIVES: To determine the clinical utility of postoperative hemoglobin (Hb) and creatinine (Cr) testing after reconstructive surgery for pelvic organ prolapse (POP).

MATERIALS AND METHODS: This is a retrospective cohort study of patients who had surgery for apical prolapse between 2017 and 2019. All subjects were admitted to the hospital for overnight observation. Subjects were divided into 2 groups: symptomatic and asymptomatic. Symptomatic patients were defined as having one or more of the following: BP < 90/60, HR > 100, UOP < 30 cc/hr, subjective dizziness, unilateral flank pain, or abdominal pain. Patients with cancer, acute or chronic kidney injury and no preoperative Hb and/or Cr were excluded. Demographic, intraoperative/postoperative data, and postoperative Hb/Cr values were recorded. Hemoglobin and BMP were obtained. The cost for these at our institution is $90.00 and $450.00, respectively, Spearman correlation coefficient was used for percent change in Hb and Cr. Fisher’s exact and Mann-Whitney tests analyzed categorical and continuous data respectively. A P value < 0.05 was considered significant. Analysis performed with STATA version 16.

RESULTS: The final analysis included 325 subjects. All subjects had apical reconstructive surgery for POP. Anterior and/or posterior vaginal wall repairs were performed in 296 of total patients (91.08%). In the symptomatic and asymptomatic groups 89 and 124 had concomitant hysterectomy respectively. Anti-incontinence surgery was performed in 103 patients in the asymptomatic group and 70 patients in the symptomatic group. One hundred twenty patients (36.9%) had postoperative symptoms suggestive of anemia. Patients with symptomatic anemia had a marked decrease in POD1 Hb from preoperative Hb compared to asymptomatic patients with a mean decrease of -18.11 g/dl and -15.49 g/dl, respectively (P < 0.001). There was no significant difference in intravenous fluids (IVFs) (P < 0.85), intraoperative use of hemostatic agents (P < 0.75), or longer operative time (P < 0.08). No (n = 0) symptomatic or asymptomatic patients required transfusion. Hb testing cost in this population was $61,745. Two patients (0.61%) had postoperative symptoms suggestive of acute kidney injury including flank and abdominal pain. Patients with symptomatic acute kidney injury had a marked increase in POD1 Cr compared to asymptomatic patients with a mean increase of +18.11 g/dl and -15.49 g/dl, respectively (P < 0.001). Additionally, symptomatic patients received additional imaging (P < 0.05). One symptomatic patient with flank pain underwent reoperation. No asymptomatic patients underwent reoperation for AKI. Cr cost in this population was $131,812.

CONCLUSION: Routine postoperative Hb and Cr testing after reconstructive surgery for apical POP is not clinically necessary in asymptomatic patients. Postoperative Hb and Cr should be reserved for symptomatic patients. Limiting testing for those with symptoms can reduce overall healthcare cost.
Racial and ethnic differences in obliterative procedures to treat vaginal prolapse
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OBJECTIVES: To determine racial and ethnic differences in the proportion of patients undergoing obliterative procedures to treat vaginal prolapse.

MATERIALS AND METHODS: This is a retrospective cohort study of surgical cases from 2010 to 2018 from the American College of Surgeons National Surgical Quality Improvement Program, a nationally validated database. Cases were identified by Current Procedural Terminology (CPT) codes for an obliterative or reconstructive apical prolapse procedure. Cases were excluded if there was a CPT, ICD-9, or ICD-10 code suggesting concomitant surgery for gynecologic cancer. We obtained perioperative characteristics and 30-day complications from the database. Modified Poisson regression was used to calculate risk ratios (RRs) and 95% confidence intervals (CIs), adjusting for potential confounders selected a priori.

RESULTS: We identified 45,865 surgical cases, of which 10% involved an obliterative procedure. Whereas the majority of patients (71%) were non-Hispanic White, 9% were Hispanic, 5% were non-Hispanic Black, and 3% were non-Hispanic Asian. Black patients had a higher prevalence of most comorbidities, including obesity (56%), diabetes (22%), and hypertension (61%), and were more likely to have an ASA classification ≥3. In the unadjusted model, Asian and Black patients were more likely to undergo an obliterative procedure compared with White patients (RR = 2.4, 95% CI = 2.1-2.7 and RR = 1.2, 95% CI = 1.4-1.3, respectively). These relative risks were largely unchanged when controlling for age, body mass index, diabetes, ASA classification, and concurrent hysterectomy (Table). Adding year of procedure, smoking and hypertension to the model, which differed between groups at baseline, had no appreciable effect on the relative risk. Although not statistically significant in the unadjusted model, in the adjusted model, Hispanic patients were 20% more likely to undergo an obliterative procedure compared to White patients (RR = 1.2, 95% CI = 1.04-1.3). Overall, 9% of patients experienced a postoperative complication. For reconstructive procedures, the adjusted risk of a complication was similar for Hispanic, Black, and Asian patients compared with non-Hispanic White patients. However, for obliterative procedures, the adjusted risk of any complication was lower for both Hispanic (RR = 0.51, 95% CI = 0.36-0.72) and Asian patients (RR = 0.46, 95% CI = 0.30-0.72) compared to White patients.

CONCLUSION: Our study identified racial disparities in patients undergoing obliterative procedures for vaginal prolapse. This highlights the need for additional studies to better understand whether such disparities are attributable to differences in preference or if these disparities are due to inequity in care for non-White patients, with the ultimate goal of ensuring equity in surgical access and shared surgical decision making.

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Reoperation rates of prolapse surgery in rural versus urban hospitals
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OBJECTIVES: To compare the reoperation rate in urban versus rural hospitals for patients who underwent procedures for apical prolapse.

MATERIALS AND METHODS: We used the Cerner Health Facts nationwide electronic medical record database to identify all patients who underwent procedures for apical prolapse between January 1, 2010, and November 30, 2018. These patients were divided into two