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Prophylactic Internal Iliac Ligation in Placenta Accreta During Cesarean Hysterectomy: Evidence Speaks

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OBJECTIVE

Placenta accreta spectrum (PAS) disorders are associated with life-threatening hemorrhage during cesarean hysterectomy. Prophylactic internal iliac artery ligation (IIAL) has been proposed as an effective technique to control blood loss and improve maternal outcomes. This meta-analysis evaluates the effectiveness of IIAL in cesarean hysterectomy for PAS by synthesizing data from existing studies.

METHODS

A systematic review and meta-analysis were conducted following PRISMA guidelines. A comprehensive search of PubMed, Embase, and Cochrane Library databases was performed to identify studies published between 2000 and 2023 that compared maternal outcomes with and without IIAL during cesarean hysterectomy for placenta accreta. Primary outcomes included intraoperative blood loss and transfusion requirements. Secondary outcomes included operative time, surgical complications, length of ICU stay, and maternal morbidity. Statistical heterogeneity was assessed using the I^2 statistic, and pooled effect estimates were calculated using a random-effects model.

RESULTS

Eleven studies involving 1,023 patients were included, with 512 patients undergoing cesarean hysterectomy with IIAL and 511 without IIAL. Pooled analysis showed that IIAL significantly reduced intraoperative blood loss (mean difference: -1,150 mL; 95% CI: -1,350 to -950 mL, $p < 0.001$) and blood transfusion requirements (mean difference: -2.1 units; 95% CI: -2.8 to -1.4 units, $p < 0.001$). Length of ICU stay was also reduced in the IIAL group (mean difference: -1.5 days; 95% CI: -2.0 to -1.0 days, $p < 0.001$). No significant differences were observed in the rates of surgical complications (e.g., bladder or ureteral injuries) or thromboembolic events. Heterogeneity among studies was moderate ($I^2 = 46\%$).

CONCLUSION

This meta-analysis confirms that prophylactic internal iliac artery ligation during cesarean hysterectomy for placenta accreta significantly reduces blood loss and transfusion requirements without increasing the risk of surgical complications. IIAL is a valuable adjunct in the surgical management of PAS disorders, enhancing maternal outcomes and recovery. Further large-scale, prospective studies are needed to validate these findings and develop standardized clinical guidelines.