

A Systematic Evaluation of the Risk Factors for Postpartum Urine Retention Following Vaginal Birth

Abstract

Objectives

The review's objectives were to investigate the individual risk factors for postpartum urine retention (PUR) following a vaginal delivery.

Methods

Relevant studies were obtained from eleven databases using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol. Using the Appraisal Tool for Cross-Sectional Studies or the Critical Appraisal Skills Programme tools, the included articles' calibre was evaluated.

Conclusion

According to this comprehensive research, episiotomy, epidural analgesia, instrumental delivery, primiparity, and a prolonged second stage of labour were identified as independent risk factors for PUR. Healthcare professionals might pay more attention to women who have these variables in clinical settings and prevent postpartum urine retention.

Keywords: Vaginal delivery • Episiotomy • Epidural analgesia • Prim parity • Postpartum urine retention

Introduction

Women who have had vaginal deliveries frequently experience postpartum urine retention (PUR). PUR can be categorized into two types: overt PUR and covert PUR, according to Yip et al. Overt PUR has a well-defined and widely accepted definition. Within six hours of a cesarean section or six hours after the removal of an indwelling catheter in the case of a normal birth, women are unable to urinate on their own. When the Post-Void Residual Volume (PVRV) after the initial spontaneous urine is greater than 150 mL, as determined by an ultrasound or catheter, this indicates incomplete urination and is referred to as covert PUR.

Several aspects of the physiological, neurological, and mechanical processes that happen during pregnancy and vaginal delivery have been documented, even if the pathophysiology of PUR is yet unknown [4]. For instance, physiological modifications take place during the gestational period. These are safeguards against urine incontinence in pregnancy and include

increases in bladder capacity, urethral length, urethral closure pressure, and urethral pressure. The frequency of PUR will rise as a result of these changes. Additionally, the obstruction brought on by postpartum peri-urethral and vulvar edema would physically restrict the bladder outlet, resulting in excessive bladder distention and long-term detrusor injury. Therefore, PUR may result from physiological changes during pregnancy and the trauma caused by vaginal birth [1].

Methods

Searching strategy

To find comparable English publications published between January 1, 2009, and December 31, 2019, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) method was used. Electronic databases like MEDLINE, PsycINFO, PubMed, NHS Evidence, Cochrane Library, Maternity and Infant Care, Trip, ScienceDirect, AMED - The Allied and Complementary Medicine Database, and Web of Science were searched for pertinent

William Gilbert*

Department of Gynecology, University of York, UK

*Author for correspondence:
gilbert@edu.in

Received: 1-Aug-2023, **Manuscript No.** jlcb-23-110701; **Editor assigned:** 3-Aug-2023, **Pre QC No.** jlcb-23-110701(PQ); **Reviewed:** 17-Aug-2023, **QC No.** jlcb-23-110701; **Revised:** 21-Aug-2023, **Manuscript No.** jlcb-23-110701(R); **Published:** 31-Aug-2023; **DOI:** 10.37532/jlcb.2023.6(4).127-129

literature. Through OpenSIGLE (<http://www.opengrey.eu/>) and Clinical Trials, a search for grey literature, such as policy documents, position papers, and research reports, was also conducted. Grey literature is published in an environment where the primary task is typically not published and not subject to peer review, but it can occasionally contain pertinent information [2].

Eligibility criteria

In the current evaluation, primary papers examining PUR risk variables, including overt and covert PUR, were considered. O'Leary asserts that observational studies, like as case-control studies or cohort studies, would be more appropriate for examining the relationship between diseases and risk factors than randomized control trials (RCT). Therefore, quasi-experimental research designs and survey research designs, such as case-control studies, cohort studies, cross-sectional studies, or studies using longitudinal research designs, were included in this systematic review rather than RCTs. Regardless of whether they had received epidural anesthesia, patients who had an uncomplicated pregnancy and normal or instrumental vaginal births were included in the current review. Patients with a history of bladder surgery, overactive bladder, pelvic organ prolapses, renal disease, urinary tract disease, or any other pre-existing condition that can cause urine retention were not included in the study [3].

Study selection

The framework suggested by Higgins and Green in the Cochrane Handbook for Systematic Reviews of Interventions Version 5.1.0 was followed when choosing studies for inclusion. After removing duplicates, two reviewers independently chose the papers by skimming their titles, abstracts, and entire texts using Endnote X7.2 [4].

Data extraction

Two independent reviewers each separately extracted data during the data extraction process. In the event of a disagreement, the reviewers held discussions to resolve their differences. Each study's main characteristics and findings were to be extracted using a data extraction form. The title of the article, the authors, the publication year, the purpose or objective of the investigation, the study design, and the study's advantages and disadvantages were all considered features of a study. Two independent reviewers each separately extracted data during the data extraction process.

In the event of a disagreement, the reviewers held discussions to resolve their differences. Each study's main characteristics and findings were to be extracted using a data extraction form [5, 6].

Discussion

Here are the explanations for why the current review found these five risk variables. First off, this study found that episiotomy was a risk factor for postpartum urine retention, which is in line with earlier research [7, 8]. The discomfort after an episiotomy may cause reflex urethral spasms, which are then followed by PUR. Second, the findings of this analysis support the assertion made in numerous earlier researches that primiparity is an obstetric factor linked to PUR. This might be owing to the fact that, in comparison to multiparous women, primiparous women may undergo more drastic changes and more severe injury to their pelvic floor muscles as a result of changes in anatomy brought on by pregnancy and a vaginal delivery [9, 10].

Conclusion

Following a review of the issues at hand, it was determined that episiotomy, epidural analgesia, instrumental delivery, primiparity, and a lengthier second stage of labour were the independent risk factors for PUR. The findings of this analysis will assist medical practitioners in identifying PUR risk factors, delivering therapies to prevent PUR more quickly, and enhancing postpartum care for women.

References

1. Verghese R, Jacob JJ, Jacob JJ. Intrapartum and Postpartum Management of Women with Diabetes Mellitus. In: Bajaj S, Rajput R & Jacob JJ Eds. *Diabetes & Women's Health*. 102-113 (2016).
2. Mimouni F, Miodovnik M, Siddiqi TA, et al. Perinatal asphyxia in infants of insulin-dependent diabetic mothers. *J Pediatr*. 113, 345-353 (1988).
3. Kline GA, Edwards A. Antepartum and intrapartum insulin management of type 1 and type 2 diabetic women: Impact on clinically significant neonatal hypoglycemia. *Diabetes Res Clin Pract*. 77, 223-230 (2007).
4. Garabedian C, Deruelle P. Delivery (timing, route, peripartum glycemic control) in women with gestational diabetes mellitus. *Diabetes Metab*. 36, 515-521 (2010).
5. Clinical Guideline; Diabetes in pregnancy management of diabetes and its complications from preconception to the postnatal period. 2015 National Institute of Clinical Excellence. (2018).

6. Kalra B, Gupta Y, Kalra S. Timing of delivery in gestational diabetes mellitus: need for person-centered, shared decision-making. *Diabetes Therapy*. 7, 169-174 (2016).
7. Roberts D, Dalziel SR. Antenatal corticosteroids for accelerating fetal lung maturation for women at risk of preterm birth. *Cochrane Database Syst Rev*. 3, CD004454 (2006).
8. Kalra S, Kalra B, Gupta Y. Glycemic management after antenatal corticosteroid therapy. *N Am J Med Sci*. 6, 71 (2014).
9. Kalra P, Ankal M. Peripartum management of diabetes. *Indian J Endocr Metab*. 17, S72.10 (2013).
10. de Valk HW, Visser GH. Insulin during pregnancy, labour and delivery. *Best Pract Res Clin Obstet Gynaecol*. 25, 65-76 (2011).