

Pitocin Induced Labors Leading to Cesarean Sections

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Pitocin is the synthetic version of the hormone oxytocin, which is naturally produced in the human body. Pitocin is a medication used to strengthen uterine contractions which can induce or augment labor and control postpartum bleeding. During labor, the human body naturally produces oxytocin to stimulate uterine contractions which aids in delivery. Since Pitocin is the synthetic version of this hormone, it mimics the same effect of oxytocin, but creates even stronger uterine contractions. The use of Pitocin has become standard practice in obstetrics because of how effective it is in stimulating uterine contractions. However, even though the use of Pitocin is effective, studies have associated its use with increased labor complications, specifically an increased rate of cesarean sections (C-sections). The probability of having c-sections increases significantly when labor induction or augmentation is done with Pitocin (Clark et al., 2021). Labor induced by Pitocin can lead to uterine hyperstimulation, fetal distress, and uterine rupture (Zhang et al., 2021). Although c-sections are sometimes necessary to ensure the safety and health of the mother and fetus, it carries complications such as higher maternal morbidity than vaginal deliveries, longer recovery times, increased risk for bleeding and infection, and newborn respiratory complications. The rate of Pitocin-induced c-sections could be drastically decreased simply by the intervention of basic nursing care. Nurses play a pivotal role in supporting and advocating for laboring mothers. Nurses should implement supportive interventions such as position changes, providing comfort, and encouraging relaxation techniques, to facilitate natural labor and promote a vaginal birth.

Pitocin is effective in performing its therapeutic use but many complications and effects come with the administration of Pitocin. The incidence of these complications could be significantly reduced with evidence-based practice interventions. Many studies have been

conducted on the different effects and complications of inducing labor with Pitocin. Aharon Dick and his colleagues research shows that women who are administered Pitocin for induction have a statistically high proportion rate of C-sections. “We found the greatest proportion of women who had been administered oxytocin among those women who had a cesarean section (Dick et al., 2022). This is partly because uterine contractions stimulated by Pitocin can become overly intense or frequent, potentially leading to uterine hyperstimulation which increases the chances of a c-section.

The incidence of Pitocin-induced c-sections is high mainly due to uterine hyperstimulation from administering too much Pitocin. Uterine hyperstimulation is when the uterus contracts too frequently or too strongly. Pitocin not only has effects on the mother, but it also has an effect on the fetus, which creates another concern. Uterine hyperstimulation can lead to fetal distress because when the uterus contracts it constricts the blood flow to the fetus reducing the oxygen it receives. Lack of fetal oxygenation results in fetal heart rate decelerations. Late decelerations usually prompt emergency interventions such as c-sections due to non-reassuring fetal heart rhythm, to prevent adverse outcomes for the fetus. A study by Xavier Espada Trespalacios and his colleagues demonstrated that newborns with respiratory complications had an increased incidence with the administration of oxytocin. “Mothers whose neonates required resuscitation were more likely to have been administered oxytocin” (Espada-Trespalacios et al., 2021). Uterine hyperstimulation can also lead to uterine rupture due to the increased stress on the uterus to contract frequently and strongly. Another study conducted by Liu H Zhang and his colleagues yielded results that proved Pitocin-induced labors cause more intense and frequent contractions that can lead to uterine rupture which prompts for an emergency a c-section. “Augmentation and induction with oxytocin were associated with an

increased risk of uterine rupture” (Zhang et al., 2021). Lastly, Aharon Dick and his colleagues research also showed that women who received oxytocin needed more interventions and had an increased incidence of post-partum hemorrhage. “Overall, women who had oxytocin administered during labor sustained more interventions such as epidural analgesia, with regard to PPH, this occurred in a greater proportion among those who received oxytocin” (Dick et al., 2022).

These complications of Pitocin create a big concern for both healthcare providers and patients. C-sections alone, also interchangeably carry the risk of uterine rupture and respiratory complications for the newborn. The issue of Pitocin-induced C-sections is significant due to the associated health risks, recovery complications, and rate of morbidity (Antoine & Young, 2020). According to the Centers for Disease Control and Prevention (CDC), nearly 32% of all deliveries in the United States are by C-section, with induced labor (Centers for Disease Control, 2022). Specifically, a study by Kristen H Kjerulff and her colleagues states that, “induced women were more likely to deliver by cesarean than women in spontaneous labor” (Kjerulff et al., 2019). Knowing the risks and the complications of a C-section and Pitocin, it is essential for nurses to implement evidence-based interventions that support the natural progression of labor and reduce the incidence of induced labor leading to a c-section.

The impact of Pitocin-induced labor leading to c-sections on nursing practice is big because of the nurse’s role in a laboring mother. The nurse should implement interventions that promote the natural progression of labor such as relaxation techniques, position changes, mobility, support, and alternative methods of induction. Relaxation techniques such as deep breathing during contractions will provide comfort, reduce stress, and help the mother feel calm, confident, and more in control of pushing. Position changes such as side-lying or sitting and

leaning forward can provide more comfort, improve fetal oxygenation, and prevent vena cava syndrome (Zambrano et al., 2024). Encouraging mobility such as walking can aid in labor progression by influencing fetal descent, cervical dilation, relieve pain in contractions, and shorten the duration of labor (Cornelius, 2022). Ensuring that the mother has adequate support during labor such as the nurse advocating, educating, providing physical support, and emotional support can encourage the mother and improve labor outcomes. Lastly, educating the mother on alternative methods of induction such as nipple stimulation and sexual intercourse can naturally induce labor by stimulating the body to produce oxytocin instead of administering synthetic oxytocin (Sanchez-Ramos et al., 2024).

Providing continuous support and advocating for the mothers' needs can help her feel valued. Educating the mother on the labor process of what to expect, and the risks and benefits of an elective c-section can help her feel more in control and make informed decisions. For example, explaining the potential for a C-section and discussing non-invasive alternatives such as mobility, positional changes, and natural methods of labor progression can help mothers make decisions aligned with their birthing plan. Clarel Antoine and Bruce Young said, "Some pregnant women choose an elective cesarean birth in part because of lack of knowledge of potential risks and for fear of pain and pelvic floor dysfunction" (Antoine & Young, 2020). Providing physical support such as a massage, or heat and cold therapy to relieve and manage pain in significant areas such as the back or perineum will provide comfort and improve outcomes. The nurse's role in facilitating a supportive, comfortable, and calming environment contributes to the physical progress of labor and addresses the emotional and psychological needs of the mother which will promote vaginal delivery. Nurses in labor and delivery are responsible for monitoring contraction patterns, fetal heart rates, and the mother's physical and emotional status. If Pitocin is

administered for induction, nurses should be attentive in identifying signs of uterine hyperstimulation or fetal distress, as timely recognition and early intervention can reduce the incidence of a c-section. Ensuring comfort, providing the mother support, and close monitoring are essential to help labor progress as naturally as possible, reducing the likelihood of c-sections.

Pitocin-induced c-sections have a direct impact on patient care due to its influence on maternal and neonatal outcomes. The longer recovery times, increased risk for morbidity, risk of respiratory complications for newborns, physical complications, and more prompts the need to implement non-pharmacological interventions. By emphasizing non-pharmacologic interventions such as mobility, positioning, and relaxation techniques nurses can reduce the need for Pitocin in certain cases potentially lowering the C-section rate. Educating mothers on these options can encourage more informed decision-making and can help reduce the pressure to induce labor unnecessarily. Mothers should also be educated on the risks and benefits of Pitocin induction. Informed consent plays a big role because it also allows mothers to make informed decisions that can be in favor of their birth plan. This will allow mothers the opportunity for a natural labor experience. Nursing care that prioritizes patient autonomy and informed decision-making establishes rapport and enhances patient satisfaction and outcomes.

In conclusion, while Pitocin can be a valuable tool for inducing labor, its use is associated with a significant increase in c-section rates, creating additional unnecessary risks for both mothers and babies. The risks and complications of Pitocin-induced c-sections prompt for intervention to change and improve maternal and neonatal outcomes. The nurse's role in promoting a natural progression of labor and vaginal delivery is extremely important. The nurse implementing non-pharmacological interventions such as ensuring comfort, providing support, relaxation, and advocating for the mother decreases the need for labor induction thus decreasing

the risk for a c-section. The support of nurses can help promote a safer, more comfortable birthing experience.

References

- Antoine, C., & Young, B. K. (2020). Cesarean section one hundred years 1920-2020: The good, the bad, and the ugly. *Journal of Perinatal Medicine*, 49(1), 5–16.
<https://doi.org/10.1515/jpm-2020-0305>
- Centers for Disease Control and Prevention. (2024, April 9). *FastStats - Births - method of delivery*. Centers for Disease Control and Prevention.
<https://www.cdc.gov/nchs/fastats/delivery.htm>
- Clark, R. R. S., Warren, N., Shermock, K. M., Perrin, N., Lake, E., & Sharps, P. W. (2021). The role of oxytocin in primary cesarean birth among low-risk women. *Journal of Midwifery & Women's Health*, 66(1), 54–61. <https://doi.org/10.1111/jmwh.13157>
- Cornelius, A. (2022). Obstetrical nursing care and cesarean section delivery rates in laboring women: An integrative review of literature (Honors undergraduate thesis). *University of Central Florida*. <https://stars.library.ucf.edu/honorsthesis/1126>
- Dick, A., Gutman-Ido, E., Chill, H. H., Karavani, G., Ryvkin, I., Porat, S., & Rosenbloom, J. I. (2022). Artificial rupture of membranes as a mode for induction of labor in women with a previous cesarean section: A retrospective cohort study. *BMC Pregnancy and Childbirth*, 22(1), 886. <https://doi.org/10.1186/s12884-022-05237-2>
- Espada-Trespacios, X., Ojeda, F., Pérez-Botella, M., Milà Villarroel, R., Bach Martínez, M., Figuls Soler, H., Anquela Sanz, I., Rodríguez Coll, P., & Escuriet, R. (2021). Oxytocin administration in low-risk women: A retrospective analysis of birth and neonatal outcomes. *International Journal of Environmental Research and Public Health*, 18(8), 4375. <https://doi.org/10.3390/ijerph18084375>

Kjerulff, K. H., Attanasio, L. B., Edmonds, J. K., Kozhimannil, K. B., & Repke, J. T. (2019).

Labor induction and cesarean delivery: A prospective cohort study of first births in Pennsylvania, USA. *Birth (Berkeley, Calif.)*, *44*(3), 252–261.

<https://doi.org/10.1111/birt.12286>

Sanchez-Ramos, L., Levine, L. D., Sciscione, A. C., Mozurkewich, E. L., Ramsey, P. S., Adair,

C. D., Kaunitz, A. M., & McKinney, J. A. (2024). Methods for the induction of labor: efficacy and safety. *American Journal of Obstetrics and Gynecology*, *230*(3S), S669–

S695. <https://doi.org/10.1016/j.ajog.2023.02.009>

Zambrano Guevara, L. M., Buckheit, C., Kuller, J. A., Gray, B., & Dotters-Katz, S. (2024).

Evidence-based management of labor. *Obstetrical & Gynecological Survey*, *79*(1), 39–53.

<https://doi.org/10.1097/OGX.0000000000001225>

Zhang, H., Liu, H., Luo, S., & Gu, W. (2021). Oxytocin use in trial of labor after cesarean and its

relationship with risk of uterine rupture in women with one previous cesarean section: A meta-analysis of observational studies. *BMC Pregnancy and Childbirth*, *21*(1), 11.

<https://doi.org/10.1186/s12884-020-03440-7>

