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Best Time to Start Induction in Term Pregnancies with Misoprostol. Evaluate Early Vs Late Induction and the Mode of Delivery

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Abstract

The magic drug/tablet /pill (Misoprostol/ Cytotec) that is used mostly in the Caribbean islands for induction has increased drastically, fifty 50 mcg makes wonders in term pregnancy 37weeks – 41 weeks. Most induction should start early as possible for a more favourable outcome (e.g. 6am) Statistics shown that early induction and closely monitoring plays a vital role for a better delivery decision for mother and her unborn child. It saves time for the health care workers to manage than via an emergency. After misoprostol is inserted, the woman would have to lay for 2 two hours in the supine position and have pre and post ctg (cardiotocography) done. Given that the process takes a few minutes to insert usually 30 minutes to 1 hour if effective, the patient should report pain or some sort of tightening. The procedure (insertion of misoprostol) can be done about 2-3 times if not effective, the management should be reviewed by the attending ob./gyn and the nurse midwife. Labour of induction is frequently indicated in women with an unfavourable cervix (bishop score <=4), with up to half of all induced labour requiring cervical ripening, prostaglandins have been utilized to increase induction success and achieve vaginal delivery. Has been used off label for over thirty years as a labour induction agent. The challenge is to provide this medication with the correct dosing for this induction and with the ability to discontinue the medication if needed, all while ensuring essential maternal and neonatal safety.

Keywords: *Cesarean Section, Cytotec/Misoprostol, Delivery, Labour, Labour of Induction, Term Pregnancy.*

Introduction

From 2009 September I started working at the Peebles Hospital "Institution on the Maternity unit where four (4) OB/Gyn consultant would utilize the use of Misoprostol (Cytotec) for induction of labour or for other means like inevitable/ incomplete abortion.[1] ' Growing interest in the use of Cytotec (misoprostol) also grew the knowledge and skills for the health care workers and the expected outcome for the safe delivery mode, also increased whether by vaginal delivery or caesarean section. [2] The usage of Pitocin/oxytocin infusion never gain interest of the ob/gyn in the British Virgin Islands compared to other Caribbean islands such as St. Kitts, Trinidad and Grenada. [3] Misoprostol/ Cytotec/ magic pill as it is called in the British Virgin Islands can do wonders an also can-do harm. [4] Induction is the method of starting labour artificially, common for labour to be induced if the baby is overdue or there's any risk to the pregnant mother or baby. Most women will go into labour naturally by 40 weeks, but sometimes it may be best to be induced. [5] Induction of labour in late pregnancy is used to prevent complications when pregnant woman or her unborn child are at risk. Every year 75 in 200 deliveries are induced. [6] The OB/Gyn would discuss with their clients about possibility of having an induction at 38weeks at antenatal visit, sometimes earlier if health problems arise such as Type 1 or type 2 diabetes, Gestational diabetes, preeclampsia, ICP intracranial hepatic cholestasis of pregnancy, pregnancy induced

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hypertension. While on the other hand many reasons might indicate not a requirement for induction with misoprostol such as if the baby is breech, history of precipitate labour, macrosomia (big baby) or if the baby has fetal growth restriction.

Purpose of the Project

The purpose of this project was to identify if induction was done early if the delivery mode would be more favourable in delivery at an earlier time via normal vaginal delivery rather than having an outcome for Caesarian Section in the wee hours in the morning.

Significance of the Study

It's intended for this research to be used by the policy makers and OB/GYN both private and public in the British Virgin Islands. The information obtained will be helpful in making a firm decision on the time to start induction of labour. To determine whether early induction is better and to understand why if not. To view and analyzed if more deliveries are done before 12 twelve midnight. To investigate if more normal vaginal deliveries or more caesarian section after using misoprostol. Upon the conclusion of this study, the researcher will understand which time is more effective for induction of labour. It will help guide the OB/GYN and the healthcare team and policy maker in making delivery in a more reasonable time before midnight and beyond. Also, for the pregnant woman and family an uneventful experience. The delivery outcome would be more positive towards a normal vaginal delivery instead of increased cases of caesarian.

Methods

Quantitative research was done. The patients were seen by four (4) OB/GYN at antenatal clinics both privately and public until time of delivery 37 weeks and beyond. Consented to participate in the research. The pregnant woman would then be swept (membrane sweep) in multigravida. Primigravida it would not be possible, because their uteri OS is closed. The Patient will be given the drug called prostaglandin which act like the natural hormones that kick start labour. 50mcg is inserted into the cervix. More than one (1) dose of prostaglandin may begin if no contractions after 6 six hours. With controlled release pessary inserted it can take 24 (twenty-four) hours to work. The time preferred is 06:00am Once labour starts it should progress normally, but it can sometimes take 24 to 48 hours to get the woman in labour. Before the pregnant woman is offered the procedure, she should be offered a membrane sweep. Induction of labour in late pregnancy is used to prevent complications when the pregnant woman or her unborn child are at risk. The ob/gyn would measure the length of the cervix, ultrasound done to see the size of the baby and a pelvimetry, to see if the pelvic is adequate for delivery. Reasons being overdue, pre labour rupture of membranes and high blood pressure. The researcher conducted a random selection of participants.

Sample

The pregnant women at term pregnancies 37-41weeks were selected from four private physicians' clinics who also worked at the main hospital Dr. D Orlando Smith Hospital and the public clinics and delivered at the same institution as mentioned. Total of 81 pregnant women had Cytotec inserted. 23 twenty-three delivered via normal vaginal delivery and 58 fifty-eight via Emergency C/S and mostly in the wee hours of the morning. Most of the emergency C/S were due to failure to progress or failed induction while on the other hand other reasons such as CPD (cephalo- pelvic disproportion), fetal distress, malposition and breech. The time the emergency c/s was ordered or called showed that across the board all 4 Ob/Gyn had to make that decision to deliver the pregnant woman around the hours of 00:00 to 05:00 am.

Experiment Done

The records were collected from the delivery book with the (patient's Initial, time of delivery, mode of delivery and reason/ complications). Few questions were asked to the 4 four Ob/Gyn to gather data on their preferences for the time of induction. Additionally, it was necessary to ensure that the information received was a true representation of their views. During the collection of data field notes were used to gather observable facts that were not captured. The data were analyzed using indirect thematic analysis procedure. Data analysis was undertaken using a framework/ spread sheet to manage, describe and explore the topic. Coding with the questions/answers was undertaken to provide an in depth understanding of the information and identify key concepts. The quantitative data analysis was used to guide coding and categorization.

Key Results

Key findings of the Ob/Gyn knowledge, attitudes, perceptions on Induction of labour. The 4 four were asked three 3 questions which were used in this study:

1. What time is best for an IOL (induction of labour) to be started?
2. Do they used the bishop score and pelvimetry before and IOL is ordered?
3. Utilizing evidenced based practices which mode of delivery gives a better / more favourable outcome?

The findings revealed that the Ob/Gyn had different views regarding Induction of Labour.

Knowledge and Perception on Induction of Labour

The doctors(ob/gyn) were knowledgeable about induction of labour. All used Cytotec 50mcg and followed the unit policy and procedure as shown below. It was obvious that the doctors had a clear knowledge, and their practices/ procedures showed it. Two (2) ob/gyn suggested that earlier induction was better for them and 1 (one) of the 2 suggested IOL should be started the night before.

Bishop Score and Pelvimetry

All ob/gyn had their patients do an ultrasound in the antenatal visits but only (2) two would have ordered a repeated ultra scan in the 3rd trimester before initiating (IOL) induction of labour. Three (3) of the ob/gyn did membrane sweep as the beginning phase for induction of labour and bishop scoring was done.

Evidence based Practices

Two (2) ob/gyn worked from experiences and one (1) worked from evidenced based practices. The other (1) one followed her feelings. All requested for a review every 4 four hours to be done on the patient especially vaginal examination. Only one (1) ob/gyn did not trust the midwives nursing staff with their VE findings and preferred for the medical officer or himself to do the VE vaginal examination. Which created some biasness. The ob/gyn with the feelings preferred to review the patients before 10pm and make that decision before midnight clocked. Other parameters were used, and delivery mode was done.

Discussions

From the data collected out of 300 deliveries recorded each year about 1/3 one third are emergencies cesarean section deliveries. The tables (1 and 2) below showing the calendar data from 2018 Oct –Sept 2019, Oct 2020- Sept 2021, Oct 2021- Sept 2022, Oct 2022- Sept 2023. The C/S (cesarean section) rate were 32.9%.

Out of 278 deliveries 100 was C/S deliveries: 42 elective and 58 as emergencies. Out of 278: 35 had induction with Cytotec (24 had Cytotec and 11 with Cytotec & oxytocin infusion added).

In 2020- 2021C/S rate 43%. Total deliveries 300: 125 as emergency, C/S emergency c/s- 53,

with Cytotec 43 and Cytotec with oxytocin infusion 10.

In 2021- 2022 C/S rate 55.4%. Total deliveries 272, Emergency C/S 113, Cytotec used 32 and 7 with Cytotec and oxytocin infusion.

In 2022- 2023 C/S rate 52.7%. Total deliveries 262, Emergency C/S 56 Cytotec used 30, Cytotec with oxytocin infusion 8.

Most of the Emergency C/S deliveries occurred after the wee hours in the morning from 00:00- 05:00hrs, hence the operating theatre staff had to be called out, which includes (anesthesiologist, pediatrician, nurses and medical officers). Since the induction with the tablet (Cytotec) was placed after 8am – 11am, the delivery time made a drastic setback for the nurses /midwives and ob/gyn. Induction time is usually 6hours -24hours if that time has passed and no delivery occurred a decision had to be made, which is termed a (fair trial). In the wee hours of delivery, the operating staff had to be called out and most nurses/ doctors do not stay on the hospital premises, causing the delivery to be delayed.

Whenever induction of labour is carried out, facilities should be available for continuous electronic fetal heart rate and uterine contractions monitoring. Some early induction ended with normal vaginal delivery about 2/3. Some done by midwives and some by Ob/Gyn's with no complications. The outcomes/findings from the emergency C/S were failed induction being the major and primary reason with other secondary factors/ complications such as fetal distress, arrest 2nd stage, breech presentation, malposition, failure to progress, cpd (cephalopelvic disproportion), true knot, placental abruption, short cord, severe pre-eclampsia. On the other hand, even with vaginal deliveries some features presented such as cord around the neck, cord around the body- extremities.

I must admit with all the deliveries whether normal vaginal or C/S all were safe with the mortality and morbidity rate very low. In May 2022 only 1 maternal death, no neonatal deaths recorded. That 1 maternal death had underlying health issues that was mentioned to the ob/gyn and his team after having pregnancy complications. "One death is too many", but the hard-working staff at that institution, praise and thanks were given because the baby was alive and well.

Table 1. Years and the Number of Deliveries with the Percentage of Emergency Cesarean Section from Cytotec

Oct- Sept Yearly	Total Deliveries	Emergency C/S Rate %
2018-2019	278	32.9%
2020-2021	300	43%
2021-2022	272	55.4%
2022-2023	262	52.7%

Table 2. Amount of Emergency Caesarean Section after using Cytotec and Cytotec with Oxytocin

Year	Emergency C/S	Cytotec	Cytotec with Oxytocin
2018-2019	51	40	11
2020-2021	54	44	10
2021-2022	55	47	8
2022-2023	56	30	26

Most Caribbean countries vary with their methods of induction of labour. The following discussed

Barbados- mechanical induction + Iv oxytocin infusion with 10 units. Starting anytime of the day consultant preference

St. Kitts – Iv oxytocin 10units starting 6 am

Grenada- Iv oxytocin infusion and Cytotec starts in the morning.

Trinidad- Prostaglandin G2 starts at 6 pm the day before.

British Virgin Islands- Cytotec 50mcg any time of the day.

Ethical Approval

Ethical approval was given by the Institution CEO of the British Virgin Islands at the Dr D Orlando Smith Hospital. The data were collected from the medical records department taken from 2018- 2023 delivery records, {check the other slide}. The institution was assured that the study was for improving the standards and care offered at the institution towards the pregnant women and their families and will not be used or given to any other sources. For the policy makers to review/make some adjustments/ changes to the policy (Induction of labor).

To understand the reasons/ causes why the OB/Gyn preferred practices were utilized, a face-to-face interview was conducted with 2 to 3 questions asked and documented. An Analysis was conducted among the (4) four OB/GYN working on the maternity unit. All are consultants and 2 two medical officers. Years of experience in the field varies and so are their preferences. Two (2) experienced Ob/Gyn prefer to start induction early, while (1) one do not have a specified time and (1) one preferred after 11 am when he makes his ward rounds.

The research and field work conducted from Jan 2018 to Oct 2023. A simple random sampling done from the delivery records with the four (4) ob/gyn consultants and medical officers cared for. Most early induction done ended with an uneventful delivery while on the other hand late induction.

After 6am ended in an emergency c/s or chaotic delivery in the wee hours of the morning.

Conclusion

Time is a great factor in the management for Induction of labour. It waits on no man, hence with the process of early induction and close monitoring of the term pregnant women delivery outcome can be more positive and more favorable. The OB/Gyn knowledge, perceptions, attitudes towards early induction needs to change and be open to suggestions when issues arise. The policy maker of the institution must review the induction of labour policy and make the necessary changes so health care workers present, and past can practice the same standard of care for an induced pregnant woman and her family. With the utilization of the bishop score and membrane sweeping for the deliveries.

The purpose of the evaluation was to investigate if early induction would be better than late induction providing a safe an efficient care for the pregnant woman and her family in the British Virgin Islands.

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Conflict of Interest

None.

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