Original Article

Induction of Labour Audit-Fauji Foundation Hospital Rawalpindi

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Abstract

Objective: The objective of audit was to see the short falls in the process and indications of induction of labour in our hospital so that changes could be made to ensure that induction is carried out only when indicated, and the process should meet specified standards. This will help improve our local standard for induction of labour and hence patient care.

Study Design: A retrospective audit.

Place and Duration: Department of Obstetrics and Gynaecology Unit II, Fauji Foundation Hospital, 1st January to 31st December 2015.

Methodology: The study was carried out in Fauji Foundation Hospital to look at the indications, process and outcome of induction of labour and see whether this meets the NICE guidelines for induction of labour. All patients with singleton pregnancy at a gestation age > 34 weeks who underwent induction of labour were included in the audit. The indication, method and outcome of induction of labour (IOL) was assessed and evaluated in all patients.

Results: The overall rate of induction in our hospital was 42 %. The success rate of Induction of labour was 78%. Major indications for cesarean section were fetal distress and failed induction of labour. Both factors were evaluated in detail. Regarding failed induction of labour it was noted that induction of labour for post dates leading to caesarean section, were mostly done at 40 + weeks but prior to 41 weeks. Similarly patients with Pre labour rupture of membranes (PROM), in the absence of chorioamnionitis were induced within 6 hours instead of waiting for 24 hours. Interval induction was not considered as an alternative option.

Conclusion: Recommendations are made on the basis of this audit and it is recommended to re-audit in the near future to see implementation of the recommendations.

Key Words: Fetal distress, Failed induction of labour, Induction of labour.

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Introduction

Labour induction is the stimulation of regular uterine contraction before the spontaneous onset of labour using mechanical or pharmacological methods in order to generate progressive cervical dilatation and subsequent delivery.[1] The rate of labour induction varies from 9.5 – 33.7% of all pregnancies annually.[2] The overall rate of induction is described 25 % in developed countries (lowest in Niger 4.5 %, highest in Srilanka 35%).[3] Induction of labour is a common procedure in our country. The exact rate of induction of labour in our country is unknown however in some institutions it is described up to 40%.[4] Meta analysis

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has shown that the process of induction of labour is associated with fewer perinatal death when compared to expectant management in postdate pregnancies[5] However It places significant strain on labour wards, requiring close monitoring owing to the risks of uterine hyperstimulation, uterine rupture and fetal distress and higher cesarean section rate[6,7] Moreover induced labor may be more painful for the woman leading to the increased use of analgesics and other pain-relieving pharmaceuticals.[8] Hence this process should be audited on regular basis.[9] We present a retrospective audit of inductions of labour carried out in Fauji Foundation Hospital during the year 2015. The aim of the audit was to look at the indications, process and outcome of induction of labour and see whether this meets the NICE Guidance (clinical guideline 70 – Induction of labour, July 2008.[10] The efficacy of various methods used for induction and mode of delivery following induction were also assessed.

Methodology

A total of 220 patients were induced at Fauji Foundation Hospital department of Obstetrics and Gynaecology unit II between January-December 2015.

Operational definitions

Failed induction of labour: Failed induction of labour is defined as no onset of labour pains after maximum dose of glandin per vaginal i.e. 3 mg doses 6 hours apart two doses. The available options after failed IOL are either to proceed to caesarean section or opt for interval induction i.e. to re induce after some interval depending upon clinical situation.

Fetal distress: Fetal distress was PH checked before proceeding to C-section in labour in defined as fetal scalp pH < 7.2 in first stage of labour and < 7.15 in second stage of labour.

Inclusion criteria: Patients with singleton pregnancy at a gestation> 34 weeks planned for induction of labour were included in the study.

Exclusion criteria: Twin pregnancy or pregnant women undergoing for induction of labour at gestation age < 34 weeks were excluded from the study.

Data collection and analysis: All patients who met inclusion criteria and were underwent induction of labour were included in the study. Patients who were planned for induction were admitted, bishop score recorded and CTG was performed. Mode of induction was decided according to bishop score. Data was collected by hospital maternity records. All variable like maternal age, parity, gestational age at induction, indication for induction of labour, method for induction of labour, mode of delivery and induction delivery interval were recorded and data was evaluated. Ethical clearance for the study was obtained from the institutional ethics committee for research

Results

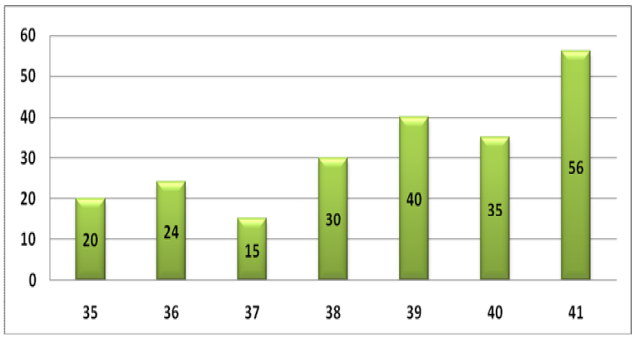
The mean age of patient was 29 years. Twenty four percent (n=54) of patient were primigravida while 76 %(n=166) were multigravida.

4 % (n=9) patient among the total induced patient had previous one cesarean section.

Regarding gestational age; 25.4 %(n=56) were induced at 41 week of gestation. 54.5 % (n=120) were induced between 37-40 weeks of gestation, while 20 % (n=44) were induced prior to 37 weeks. (table I ,Fig 1,)

Table I : Gestational age at IOL

Gestational age (weeks)	No. of patients
35	20
36	24
37	15
38	30
39	40
40	35
41	56

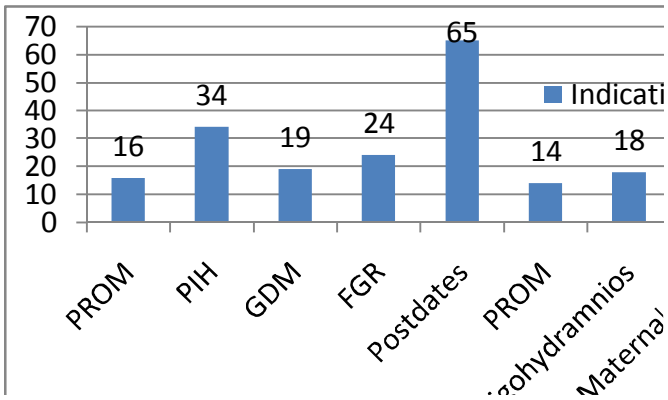


Regarding mode of induction 73 % (n= 160) were induced with glandin E 2 gel while 18 %(n=40) were induced with prostin tablet and 9 % (n=20) were induced with ARM.

The most common indication for induction of labor in our cohort was postdates 37 % (table II, Figure 2)

Table II: Indications for IOL

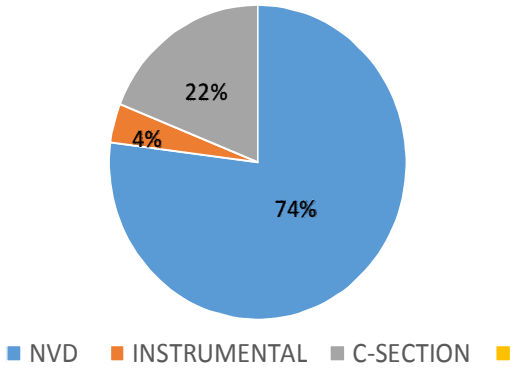
Indication of IOL	No of patients	%
PPROM	16	7%
PIH	34	15%
GDM	19	9%
FGR	24	11%
Postdates	82	37%
PROM	14	6%
Oligohydramnios	18	8%
Maternal wish	13	6%



Regarding outcome of IOL majority (78 %) delivered vaginally. (table III, Figure 3)

Table III: Outcome of IOL

Outcome of IOL	No of patients	%
NVD	163	74
CS	48	22
Instrumental delivery	9	4



Induction delivery interval was 6-12 hours in 59 % of cases, 0-6 hours in 27% cases and 12-18 hours in 14% of cases, there was no case of uterine hyperstimulation or uterine rupture.

Among those delivered by cesarean section the indication for cesarean section were for failed IOL, fetal distress and secondary arrest. (table IV, Figure 4)

Table IV: Indication of CS among IOL patients

Indication of CS among IOL	NO. of patients
Failed IOL	19
Fetal Distress	21
Failure to progress	08

The factor 'failed IOL" was further evaluated in detail and it was revealed that cesarean section performed due to failed IOL were induced for Postdates (7), FGR (5), PPROM (4) and DM (2) social reason (1)[5] (table V , Figure 5)

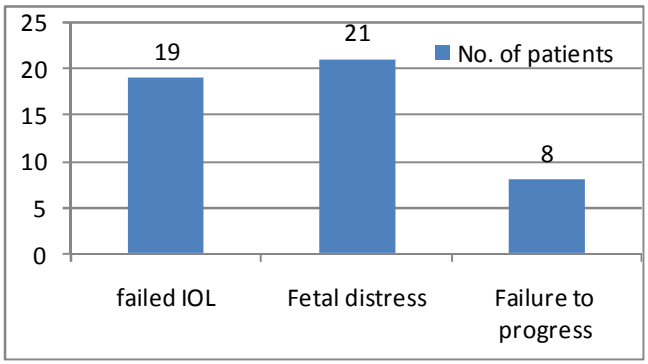
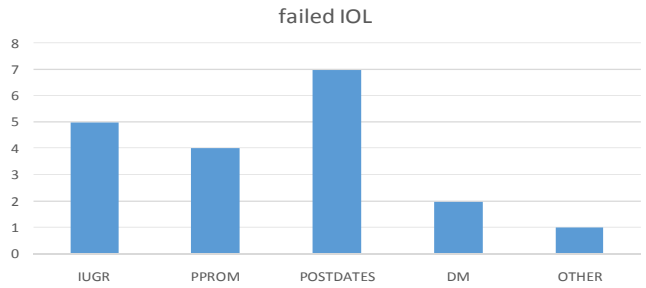


Table V: Indication of IOL among those who underwent CS for Failed IOL

Indication of IOL among those who underwent CS for Failed IOL	No. of patients
IUGR	05
PROM	04
POSTDATES	07
DM	02
Others	01



Discussion

The overall rate of induction in our hospital was 42%, which is much higher when compared with other hospitals[3,11] but it can be justified as it is tertiary care referral centre and high risk pregnancies are referred. There are various methods used for induction of labor [11] but in our hospital the most commonly employed method was prostaglandin gel / prostin tablet which is recommended by NICE.[10] This audit shows good compliance with NICE guidelines in most respects regarding decision made by consultant, timing and dosage of induction. The commonest indication for induction of labor in our hospital which was postdates i.e. 37%, followed by pregnancy induced hypertension 15%. In another study conducted in Maiduguri, Nigeria common indications for induction of labour were same though frequency were higher than described in our study i.e. 46.8% for postdates and 33.5% for pregnancy induced hypertension.[12] Bukola et al. identified pre labor rupture of membranes and hypertension in pregnancy as the commonest indications.[13] Success rate for induction was 78 % in our hospital that is higher

than 70.3% reported in the United States,[14] but slightly lower than that reported in Agha Khan University 81% and in public health facilities Hawassa town Ethopia 83%.[15] Fetal distress and failed induction were the two main causes leading to cesarean sections in our audit. Lewani et al. reported fetal distress and prolonged labor as main causes of cesarean section in induced patients.[11] We evaluated these two factors in detail keeping NICE guidelines as standard. Regarding fetal distress the only available gadget for fetal monitoring is CTG. Although positive predictive value of CTG is low, suspicious CTG very often lead to cesarean section this is in contrast to the guidelines which recommends that CTG alone should not be used for decision making and for significant meconium fetal blood sampling should be used.[16]

For failed IOL, we found that among IOL for post dates leading to caesarean section, IOL were mostly done at 40 + weeks but prior to 41 weeks and membrane sweeping was not offered in routine for postdate pregnancies at 40-40+6 weeks. Similarly women with PROM were induced immediately (within 6 hour) even in the absence of chorioamnionitis. Interval induction was not considered as an alternative option in any case. Haq et al. in a study in PAEC hospital Islamabad showed that induction of labour at 41 weeks was associated with higher vaginal deliveries as compared to IOL at 40 weeks (89% VS 71%).[17]

Keeping NICE guidelines as standard we make certain recommendation to further improve the outcome of labour as implication of guidelines has been associated with an improved outcome of Induction of labor.[18]

- Fetal monitoring of high risk pregnancies should be supplemented with fatal blood sampling as positive predictive value of CTG is low.[10]
- IOL for postdates should be at 41 weeks supplemented by sweeping membranes 40-40+6 weeks .[10]
- In PROM in the absence of chorioamnionitis, 24 hours may be given prior to trial of labour.[10]
- Interval induction should also be kept an option for low risk elective induction.[10]

Conclusion

Overall induction of labour in our hospital meets international standards but certain recommendations were made according to NICE guidelines to further improve outcome of induction. Re-audit in the near future after implementation of the recommendations is required to see improvement in IOL success rates.

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