**Outpatient induction of labour in the UK: A survey of practice.**

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Abstract

Objective:

To identify the current UK use of outpatient procedures for cervical ripening prior to induction of labour

Study Design:

Postal survey of consultant led obstetric units within the United Kingdom
A questionnaire was sent by post to 210 NHS consultant led obstetric units within the UK. Units that provided outpatient induction of labour (OP IOL) were asked complete a series of questions defining their protocol for risk stratification and management.

Results:
The survey had a 78% response rate. 17.6% of units stated that they currently or soon will provide OP IOL. All units were willing to provide OP IOL for post-dates singleton pregnancies and none provided this service for women with a previous caesarean or multiple pregnancy. 96% of inductions were initiated in a hospital setting prior to discharge home. 84% of units used Propess® to initiate OP IOL and 96% had a fetal assessment with CTG. Only 40% of units had a clear mechanism for assessment once the woman had gone home. 72% of units performed regular audit of their practice.

Conclusions:

We suggest that robust comparative research within a UK context is urgently required to establish the safety and cost effectiveness of outpatient induction of labour before this technique becomes fully embedded in clinical care without an adequate evidence base.

Keywords: induction of labour, outpatient induction of labour

Introduction

There is increasing evidence of the safety of induction of labour (IOL) in a wide range of clinical situations[[1](#_ENREF_1)] as well as for uncomplicated post term pregnancies [[2](#_ENREF_2)]. Currently 20% of all births in the UK are induced [[2](#_ENREF_2), [3](#_ENREF_3)], representing approximately 122,000 procedures a year [[2](#_ENREF_2)]. The growing clinical indications for labour induction have led some units to induce up to 38% of pregnancies [[4](#_ENREF_4)]. Therefore, induction of labour is likely to represent a growing demand upon hard pressed maternity services [[3](#_ENREF_3)].

The commonest method of labour induction in the UK involves the use of intravaginal prostaglandin E2 (PGE2, Dinoprostone) administered as a gel or tablet either on maternity wards, delivery suites or within dedicated induction suites. Recently, modified release preparations of prostaglandin, such as Propess® (PGE2) or Misodel™ (Misoprostol), have been introduced which allow a more gradual release of drug over a 24 hour period with less need for vaginal examination. Whilst these newer preparations may streamline the process of induction, they appear to be no better than traditional methods at achieving vaginal delivery [[5](#_ENREF_5)], although they may reduce uterine hyperstimulation, where contractions occur too frequently [[2](#_ENREF_2)]. Induction with mechanical therapies [[6](#_ENREF_6)] may be of benefit to avoid specific complications such as hyperstimulation [[3](#_ENREF_3)]. Alternative vaginal preparations, such as Nitric oxide, have been attempted but have failed to make it into routine use [[2](#_ENREF_2), [7](#_ENREF_7), [8](#_ENREF_8)].

The development of these modified release induction agents has offered the potential to perform IOL as an outpatient. There appears to be a growing desire from women and clinicians to move some of the induction process to the home setting [[9](#_ENREF_9)]. The key drivers include a desire to reduce demand on clinical services, reduce costs and to increase women’s satisfaction with the process.

Research into the safety, efficacy and cost-effectiveness of outpatient induction of labour (OP IOL) has been highlighted as a need by NICE guidance [[2](#_ENREF_2)] and NICE quality standards [[3](#_ENREF_3)]. However, little is known about the full cost of the process and despite some new large studies [[9](#_ENREF_9)] some authors retain concerns over a lack of fetal monitoring at home; which has led some to develop novel techniques for continuous monitoring of fetal wellbeing [[10](#_ENREF_10)]. The evidence for costs savings from OP IOL is lacking [[11](#_ENREF_11)] and the most appropriate means of assessing safety has also not been determined.

Methods

The survey (Appendix One) with a covering letter was mailed to the clinical lead for obstetrics in each of 210 NHS hospitals with a consultant obstetric unit in the UK (England, Wales, Scotland, Northern Ireland, Channel Islands and Isle of Man). The questionnaires were sent in two rounds in April and June 2014.

If the unit did not perform outpatient induction of labour then the responder was thanked for their time and no further questions were necessary. Units that did provide this service were asked to complete a further 16 questions about patient selection, methods used and safety monitoring. Finally, each unit was asked whether their clinical data were regularly audited and made available for external scrutiny. Units that provided outpatient induction of labour were asked to provide a copy of their induction of labour guideline/protocol.

Results

164/210 units responded giving a response rate of 78%. Of the units that responded 27/164 (16.5%) advised that they were currently using OP IOL with a further 2/164 (1.2%) units stating they would be starting in the next few months for a total of 29 units (17.6 %) practising or intending to practice OP IOL in the UK in 2014. Of those units currently providing OP IOL, 2 failed to provide any information as to the methods they used and so were excluded, leaving 25 responses for further analysis. One unit started to provide OP IOL in 1998 with 15 (60%) units having only started to offer this service within the last 12 months.

The median size of unit providing OP IOL was 5,500 deliveries per annum (range 2,300-9,000). All units stated that they provided OP IOL as part of hospital policy and each had a guideline on the use of this service.

All units offered OP IOL to women with a post-dates pregnancy (Table One). A large number (18, 72%) also offered this management option to other women locally determined to be low risk at term. A single unit offered OP IOL to women with uncomplicated prelabour rupture of membranes.

No unit offered OP IOL to women with a previous caesarean scar or with a multiple pregnancy (Table One). Other characteristics used to determine suitability for OP IOL varied widely; maternal choice (13, 52%), fetal reasons (1, 4%), consultant choice (13, 52%), proximity to hospital (10, 40%), favourable cervix (6, 24%), unfavourable cervix (16, 64%) and 4+ previous vaginal deliveries (4, 16%).

Most OP inductions of labour were initiated in the antenatal ward (15, 60%), with a significant number also being performed on maternity assessment units (9, 36%) or on the labour ward (7, 28%) (Table Two). A small number of inductions were begun in an inductions suite or clinic (3, 12%), midwife led unit (2, 8%) or at home (1, 4%). Overall 96% of inductions were initiated in a hospital setting. No inductions were begun in stand-alone midwife units, although these units were not specifically surveyed.

The majority of units used Propess® (21, 84%) to initiate OP IOL, although a few units used dinoprostone 1mg (3, 12%), dinoprostone 2mg (2, 8%), dinoprostone 3mg (1, 4%) or isosorbide mononitrate (1, 4%). No units reported using an intracervical balloon catheter for initiation of OP IOL. 50% of the units using dinoprostone to initiate OP IOL would give a single dose only.

Overall 96% of units performed a CTG of some description prior to OP IOL. The majority of units performed a standard CTG (21, 84%); with some units instead using computerised CTG (3, 12%) (Table Three). Only a single unit relied upon fetal heart rate auscultation alone as a means of ensuring fetal well-being prior to OP IOL. Ultrasound was used to assess liquor volume in some units (7, 28%), but none used this modality to assess fetal weight or Doppler. A single unit (4%) did report using ultrasound to determine presentation prior to OP IOL, but not to assess fetal well-being.

After initiation of OP IOL, only a single unit (4%) asked the patient to return for a formal CTG assessment. No other units performed an assessment of fetal well-being during OP IOL.

During OP IOL all units reported that they provided the woman with a telephone number for hospital midwife contact (Table Four), although how dedicated these are was not ascertained. A small number of units (3, 12%) had a midwife dedicated to this purpose, and a third of units (8, 32%) made a regular phone call to the woman whilst she was at home. Only a single unit reported sending a community midwife (CMW) to routinely asses the woman during OP IOL. Overall 10 units (10, 40%) had some degree of more direct contact with the woman than a general hospital number. No units reported using CTG telemetry systems.

18 (72%) units had performed audit of their clinical practice. 3 (12%) units had made the results of audit/research publicly available.

Discussion

Key findings

Our survey shows that currently few units are providing this service but several expressed an interest in setting this service up, with 60% of those providing OP IOL had only begun offering this service in the last 12 months. It is reassuring to observe that most units currently reserve OP IOL for relatively low risk pregnancies and that a degree of fetal assessment and risk stratification appears to happen prior to initiating OP IOL.

There was a degree of variation in the methods of induction used for OP IOL, although with the majority of units using Propess® which due to its slow release of prostaglandin may be more suitable for OP IOL rather than vaginal Prostaglandin tablets or gels most commonly used for inpatient induction. It is perhaps surprising that no units used intracervical catheters of any description to initiate OP IOL as there is a body of scientific evidence supporting their effectiveness [[6](#_ENREF_6)].

Assessment of fetal well-being prior to initiation of OP IOL was generally performed using a CTG (as directed by NICE)[[2](#_ENREF_2)], although a proportion of units also used ultrasound to assess liquor volume.

Once OP IOL was initiated the vast majority of units did not have a direct communication with the woman or a means in place for ensuring safety of mother and child. The majority relied upon the woman calling a general hospital contact number if she had concerns.

Strengths

This is the first national survey of the current provision of outpatient induction of labour in the UK. The survey was large and had a good response rate and is therefore likely to be accurate in its assessment.

Limitations

This is a UK based survey and therefore interpretation in other settings should be done with caution. The responses given may differ from the situation in routine clinical practice but this is a problem common to survey studies. This survey was not designed, nor would it be able, to assess the financial implications of OP IOL.

Some units had only recently begun providing OP IOL and this may be reflected in only 72% of units performing audit despite it being a NICE criteria for OP IOL [[3](#_ENREF_3)].

Conclusion

There appears to be a growing desire to provide an OP IOL service.

It is reassuring to note that most units appear to have robust selection criteria for suitability for OP IOL and assessment of fetal well-being prior to induction. However, it is of concern to note that very few units had a process of assessing the woman and her fetus once she had gone home.

We suggest that robust comparative research within a UK context and audit of outcomes from those units performing OP IOL is required to establish the safety and cost effectiveness of outpatient induction of labour. An opportunity currently exists to perform this research before this technique becomes fully embedded into clinical care.

Declaration

The authors received no external funding for this project and have no conflicts of interest to declare.

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