WHO recommendation on use of intravenous oxytocin alone for induction of labour

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Recommendation

If prostaglandins are not available, intravenous oxytocin alone should be used for induction of labour. Amniotomy alone is not recommended for induction of labour.

(Moderate-quality evidence, weak recommendation)

Publication history

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Remarks

- Immediately after the initiation of intravenous oxytocin, it is advisable to monitor closely the oxytocin infusion rate, response of the uterus to oxytocin, and fetal heart rate. Specific guidance on how to use oxytocin for induction of labour can be found in the WHO manual Managing complications in pregnancy and childbirth: a guide for midwives and doctors.(1)

Background

Induction of labour is defined as the process of artificially stimulating the uterus to start labour.(1) It is usually performed by administering oxytocin or prostaglandins to the pregnant woman or by manually rupturing the amniotic membranes. Over the past several decades, the incidence of labour induction for shortening the duration of pregnancy has continued to rise. In developed countries, the proportion of infants delivered at term following induction of labour can be as high as one in four deliveries. (2-4)
Over the years, various professional societies have recommended the use of induction of labour in circumstances in which the risks of waiting for the onset of spontaneous labour are judged by clinicians to be greater than the risks associated with shortening the duration of pregnancy by induction. These circumstances generally include gestational age of 41 completed weeks or more prelabour rupture of amniotic membranes, hypertensive disorders, maternal medical complications, fetal death, fetal growth restriction, chorioamnionitis, multiple pregnancy, vaginal bleeding and other complications.

Although currently available guidelines do not recommend this, induction of labour is increasingly being used at the request of pregnant women to shorten the duration of pregnancy or to time the birth of the baby according to the convenience of the mother and/or health-care workers.(5, 6) During induction of labour, the woman has restricted mobility and the procedure itself can cause discomfort to her. To avoid potential risks associated with the procedure, the woman and her baby need to be monitored closely. This can strain the limited health-care resources in under-resourced settings. In addition, the intervention affects the natural process of pregnancy and labour and may be associated with increased risks of complications, especially bleeding, caesarean section, uterine hyperstimulation and rupture and other adverse outcomes. (2, 7)

Methods

The recommendation was developed using standardized operating procedures in accordance with the process described in the “WHO handbook for guideline development”, guided by the GRADE approach.(7, 8) Outcomes used for this recommendation were aligned with the prioritized outcomes from the WHO recommendations on induction of labour (2011).(9)

A Cochrane systematic review was conducted, on use of oxytocin alone for induction of labour.(10) In the review, randomized controlled trials relevant to the key question were screened by review authors, and data on relevant outcomes and comparisons were extracted. Evidence profiles (in the form of GRADE tables) were prepared for comparisons of interest, including the assessment and judgments for each outcome, and the estimated risks.

WHO convened a Guideline Development Group (GDG) meeting on recommendations induction of labour in April 2010, where this recommendation was developed. The GDG comprised of a group of independent experts, who used the evidence profiles to assess evidence on effects on the pre-specified outcomes. GDG members discussed the balance between desirable and undesirable effects, overall quality of supporting evidence, values and preferences of stakeholders, resource requirements, cost-effectiveness, acceptability, feasibility and equity, to formulate the recommendation. Remarks were added to clarify the recommendation, and aid implementation.

Recommendation question

For this recommendation, we aimed to answer the following question:

- in pregnant women at or beyond term (P), does induction of labour intravenous oxytocin alone (I), compared to no intervention, (C), improve maternal and perinatal outcomes (O)?

Evidence Summary

Evidence related to the use of intravenous oxytocin for induction of labour at term was available from a Cochrane systematic review.(10) Compared with placebo or expectant management, the use of oxytocin
alone was associated with fewer vaginal births not achieved within 24 hours of induction of labour (three trials, 399 participants, RR 0.16, 95% CI 0.1–0.25), fewer admissions to a neonatal intensive care unit (seven trials, 4387 participants, RR 0.79, 95% CI 0.68–0.92), and increased risk of caesarean section (24 trials, 6620 participants, RR 1.17, 95% CI 1.01–1.35) (EB Table 2.1.1).

Only one small trial (184 participants) had been included in the review (11) that had compared oxytocin plus amniotomy with placebo or oxytocin plus amniotomy with expectant management (EB Table 2.2.1). Two small trials with 309 participants had compared oxytocin plus amniotomy with oxytocin alone (EB Table 2.2.4). In both those trials, no advantages were observed with the addition of amniotomy to intravenous oxytocin for induction of labour. The combined use of intravenous oxytocin and amniotomy was also compared with amniotomy alone in two trials with 296 participants (EB Table 2.2.5). The risk of not achieving vaginal birth within 24 hours was reduced in the group that received oxytocin (RR 0.12, 95% CI 0.04–0.41), which favours a crucial role for oxytocin in this combination. Intravenous oxytocin plus amniotomy was compared to vaginal prostaglandins in 10 trials (EB Table 2.2.2). These trials found that caesarean section rates were similar in both groups.

Other critical outcomes of perinatal death, vaginal birth not achieved within 24 hours, maternal mortality and severe morbidity and admission to a neonatal intensive care unit were reported in a small number of trials, yielding very-low- to low-quality evidence. The use of intravenous oxytocin alone has also been compared with prostaglandins (EB Tables 2.1.2, 2.1.3, 2.1.4). Overall, the use of prostaglandins was associated with a reduced risk of vaginal birth not achieved within 24 hours and fewer caesarean births. The relationship between oxytocin use and prostaglandins will be further evaluated in sections 4.3.2 (Misoprostol for induction of labour at term) and 4.3.3 (Prostaglandins other than misoprostol for induction of labour).

**Implementation considerations**

- The successful introduction of this recommendation into national programmes and health-care services depends on well-planned and participatory consensus-driven processes of adaptation and implementation. The adaptation and implementation processes may include the development or revision of existing national guidelines or protocols based on this recommendation.
- The recommendation should be adapted into a locally appropriate document that can meet the specific needs of each country and health service. Any changes should be made in an explicit and transparent manner.
- A set of interventions should be established to ensure that an enabling environment is created for the use of the recommendations (including, for example, the availability of induction agents and monitoring capacity), and that the behaviour of the healthcare practitioner changes towards the use of this evidence-based practice.
- In this process, the role of local professional societies is important and an all-inclusive and participatory process should be encouraged.

**Research implications**

The GDG identified that further research on the following high-priority questions is needed:

- What risks (for both the mother and the fetus) are associated with induction of labour and, in terms of those risks, how does induction of labour compare with elective caesarean section? What is the role of caesarean section in the management of women in whom induction of labour has failed?
- In settings where reliable gestational age determination is problematic, what should be the policy for labour induction at term and post-term?
Related Links

**WHO recommendations on induction of labour** (2011) – full document and evidence tables

**Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice**

**Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors (2nd ed)**

Supporting systematic reviews:


References
