WHO recommendation on the use of amniotomy alone for prevention of delay in labour

19 May 2014

Recommendation

The use of amniotomy alone for prevention of delay in labour is not recommended.

(Weak recommendation, very low-quality evidence)

Publication history

First published: May 2014

Updated: prioritized for updating in 2018

Assessed as up-to-date: May 2014

Remarks

- The GDG noted that in spite of the common use of amniotomy for prevention of labour delay in clinical practice there is no clear evidence that the potential benefits outweigh harms. Although the GDG acknowledged the simplicity of performing the procedure and its feasibility in many settings, they chose not to recommend the intervention in favour of avoiding unnecessary discomfort to the woman and the concept of reducing medicalization of childbirth.

- As early amniotomy may increase the risk of perinatal HIV transmission, this recommendation could be strengthened in settings where HIV infection is prevalent and women may present in labour with unknown HIV status.

Background

Difficult labour (or dystocia) is characterized by abnormally slow labour progress arising from inefficient uterine contractions, abnormal fetal presentation or position, inadequate bony pelvis or abnormalities of the pelvic soft tissues of the mother. (1, 2) Evidence suggests that up to one third of first-time mothers experience delay in the first stage of labour. (3)
Augmentation of labour is the process of stimulating the uterus to increase the frequency, duration and intensity of contractions after the onset of spontaneous labour. It has commonly been used to treat delayed labour when uterine contractions are assessed to be insufficiently strong or inappropriately coordinated to dilate the cervix. Labour augmentation has traditionally been performed with the use of intravenous oxytocin infusion and/or artificial rupture of amniotic membranes (amniotomy). The procedure aims to shorten labour in order to prevent complications relating to undue prolongation, and to avert caesarean section. There is evidence that a significant proportion of women with uncomplicated pregnancies are subjected to routine augmentation of labour with oxytocin. (4)

While augmentation of labour may be beneficial in preventing prolonged labour, its inappropriate use may cause harm. Augmentation with synthetic oxytocin may result in uterine hyperstimulation, with adverse effects such as fetal asphyxia and uterine rupture, and thus increase the risk of a cascade of interventions during labour and delivery. (5)

### 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.(6) Outcomes used for this recommendation were aligned with the prioritized outcomes from the WHO recommendations on augmentation of labour (2014).(7)

A Cochrane systematic review was conducted, on the use of amniotomy as a single intervention to prevent delay in the first stage of labour.(8) 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 on augmentation of labour in September 2013, 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.

Further information on procedures for developing this recommendation are available [here](#).

### Recommendation question

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

- in pregnant women in labour (P), does use of amniotomy alone in labour (I), compared to no intervention (C), prevent delay in labour (O)?

### Evidence Summary

Evidence related to the use of amniotomy as a single intervention to prevent delay in the first stage of labour was drawn from a Cochrane systematic review of 14 RCTs (> 5000 women) comparing routine amniotomy
versus intention to preserve amniotic membranes. (8)

Women were recruited in early labour and were progressing normally at the point of randomization. Results were reported overall, and for primiparous and multiparous women separately.

Trials were predominantly conducted in high-resource settings (11 trials in Europe, Canada and the USA, and one trial each in Iran, Nigeria and the Palestinian West Bank).

Routine amniotomy versus intention to preserve amniotic membranes (no routine amniotomy): maternal outcomes

- Overall, there was no significant reduction in the length of the first stage (MD –20.43 min, 95% CI –95.93 to 55.06; five trials, 1127 women) or the second stage (MD –1.33 min, 95% CI –2.92 to 0.26; eight trials, 1927 women) of labour. However, there was a statistically significant but modest reduction in the length of the second stage of labour for primiparous women (MD –5.43 min, 95% CI –9.98 to –0.89; seven trials, 653 women).

- For caesarean section, the observed difference between the groups was not statistically significant, but there was a trend towards an increased risk in the amniotomy group (RR 1.27, 95% CI 0.99 to 1.63; nine trials, 5021 women). The only trial that reported caesarean section by indication showed no difference between the groups: caesarean section for fetal distress (RR 3.21, 95% CI 0.66 to 15.6); caesarean section for prolonged labour (RR 0.45, 95% CI 0.07 to 3.03).

- A significantly lower risk of “dysfunctional labour” was reported for women in the routine amniotomy group (RR 0.60, 95% CI 0.44 to 0.82; three trials, 1695 women).

- Three trials (1740 women) reported maternal mortality. There was one maternal death recorded and no difference was observed between the groups.

- In three trials (2150 women), there was no observed difference in the rates of maternal infection (RR 0.88, 95% CI 0.43 to 1.82). None of the trials in the review reported other indicators of serious maternal morbidity.

- No significant difference was observed in the incidence of PPH (blood loss > 500 ml) (RR 0.46, 95% CI 0.14 to 1.50; two trials, 1822 women).

- Two trials reported very low and similar incidence of cord prolapse in both groups.

Routine amniotomy versus intention to preserve amniotic membranes (no routine amniotomy): infant outcomes

- Overall, there was a paucity of data for critical and important neonatal outcomes and no differences were observed in any of those reported.

- No significant differences were observed between the groups for perinatal death (RR 3.01, 95% CI 0.12 to 73.59; eight trials) or indicators of neonatal morbidity: seizures (RR 0.88, 95% CI 0.15 to 5.35; five trials); intracranial haemorrhage (no estimable data); respiratory distress syndrome (RR 0.20, 95% CI 0.01 to 4.16; two trials); meconium aspiration syndrome (RR 3.06, 95% CI 0.83 to 11.27; two trials); cephalohaematoma (RR 1.52, 95% CI 0.81 to 2.83; three trials); fracture (RR 3.01, 95% CI 0.31 to 28.80; one trial); jaundice (RR 0.90, 95% CI 0.76 to 1.06; five trials); and admission to NICU (RR 1.08, 95% CI 0.77 to 1.50; five trials).

- There was no observed difference between groups for acidosis (defined as cord blood arterial pH < 7.2) (RR 1.18, 95% CI 0.8 to 1.73; two trials), although a trend towards a reduction in Apgar score < 7 at five minutes was reported for neonates in the routine amniotomy group (RR 0.53, 95% CI 0.28 to
Further information and considerations related to this recommendation can be found in the WHO guidelines, available at:

http://apps.who.int/iris/bitstream/handle/10665/112826/WHO_RHR_14.15_eng...

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 augmentation 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 are the effects of amniotomy alone when used for the treatment of delayed labour in women with scarred uterus?
- What are the comparative effects of oxytocin alone, amniotomy alone and concurrent oxytocin and amniotomy in women with confirmed delay in the first stage of labour?
  - How does the sequence of oxytocin and amniotomy as concurrent interventions affect outcomes when used for labour augmentation?

Related Links

WHO recommendations for augmentation of labour (2014) –full document and evidence tables

Supporting systematic review:


References

Citation


Published on RHL (https://extranet.who.int/rhl)
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