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Timing of hospital admission in labour: latent versus active phase, mode of birth and intrapartum interventions. A correlational study

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ABSTRACT

Background: Hospitalization of women in latent labour often leads to a cascade of unnecessary intrapartum interventions, to avoid potential disadvantages the recommendation should be to stay at home to improve women's experience and perinatal outcomes.
Aim: The primary aim of this study was to investigate the association between hospital admission diagnosis (latent vs active phase) and mode of birth. The secondary aim was to explore the relationship between hospital admission diagnosis, intrapartum intervention rates and maternal/neonatal outcomes.
Methods: A correlational study was conducted in a large Italian maternity hospital. Data from January 2013 to December 2014 were collected from the hospital electronic records. 1.446 records of low risk women were selected. These were dichotomized into two groups based on admission diagnosis: 'latent phase' or 'active phase' of labour.
Findings: 52.7% of women were admitted in active labour and 47.3% in the latent phase. Women in the latent phase group were more likely to experience a caesarean section or an instrumental birth, artificial rupture of membranes, oxytocin augmentation and epidural analgesia. Admission in the latent phase was associated with higher intrapartum interventions, which were statistically correlated to the mode of birth.
Conclusions: Women admitted in the latent phase were more likely to experience intrapartum interventions, which increase the probability of caesarean section. Maternity services should be organized around women and families needs, providing early labour support, to enable women to feel reassured facilitating their admission in labour to avoid the cascade of intrapartum interventions which increases the risk of caesarean section.

Statement of significance

Problem

A medicalized and a hospital-centred culture of pregnancy and childbirth in Italy as elsewhere, appears to be associated with women being admitted to hospital while in the latent phase of labour.

What is already known

Women hospitalized in the latent phase of labour are more likely to experience unnecessary intrapartum intervention.

What this paper adds

This is the first Italian study to observe that delaying childbearing women's admission until in the active phase of labour may lead to a positive increase in rates of normal labour and birth. Maternity services should be organized around women and families' needs to ensure women receive appropriate support to facilitate their admission in active labour.

Abbreviations: ARM, artificial rupture of membranes; MAP, medically assisted procreation.

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1. Introduction

The latent phase of labour, or early labour, can be defined as a period of time, not necessarily continuous, when painful contractions are present and initial cervical changes occur, including cervical effacement and dilation up to 4 cm.[1] The uterine contractions become progressively regular, polarized and coordinated, leading to the next active phase of labour.[2] The latent phase of labour appears to be quite contentious among healthcare professionals worldwide in terms of definition, diagnosis and management.[3,4] According to a number of sources, the duration of early labour ranges from 6–8 h up to 24–36 h.[3,1] Given its extremely variable duration, it is difficult to define a 'normal' or average range of time for this stage of labour.[5,6] Friedman[7] argued that this variability may partially depend on the woman's sensibility to external changes, such as emotions and environment. Contemporary studies of Zhang et al,[8] suggest that the active phase of labour may not start until 5 cm dilation in multiparas and even later in nulliparous. Diagnosing arrest at 4 h without cervical change prior to 6 cm may be premature. International guidelines recommend that the admission to hospital of women in early labour should be delayed by encouraging them to remain home until in active labour; if admitted, healthcare providers should not intervene to modify the length of labour while waiting for its spontaneous onset.[9,1] Jackson et al.[10] and Scotland et al.[11] suggest the introduction of guidelines aimed at discouraging early admissions and unnecessary procedures during labour. Lauzon and Hodnett[12] found that early labour assessment programs deferring the admission of women who are not in established labour may bring benefits to women such as shorter length of stay on labour ward and higher levels of active participation and control during labour and birth. Hospitalization of women in early labour often leads to a cascade of unnecessary interventions[13] when compared to women admitted in active labour: increased rates of oxytocin augmentation, artificial rupture of membranes, analgesia, instrumental birth and caesarean section.[5,14–18]

Despite agreement from maternity care providers, research evidence and international guidelines[1,9] on the benefits of delaying hospitalization during the latent phase, childbearing women often manifest the need for reassurance and support during early labour and may expect to be admitted to hospital, even if not in active labour.[19,20,21] Therefore, the latent phase of labour is recognized as an area of conflict between women and healthcare professionals.[22]

In Italy, maternity care is provided as part of the public service by the Sistema Sanitario Nazionale (SSN), which offers free universal health coverage funded by taxation. No different pathways for low or high risk women are available. Births take place mainly in obstetric units with no options of home visits from SSN by a community or a hospital midwife to women in early labour.[23,24] The medicalized and hospital-centred culture around pregnancy and childbirth appears dominant[25] and, although there are no national research, inappropriate hospitalization in early labour is still quite common.

Furthermore, in Italy there is a lack of research and information about midwifery care, settings and timing of admission during the latent phase which may contribute to intrapartum management and therefore to maternal and neonatal outcomes. This is in contrast with the growing body of international literature around the management of early labour in low risk women[5,17,14,12] highlighting how delaying hospital admission may be protective against unnecessary interventions during labour.

Although the hospital where we conducted the research promotes the normality of childbirth (intrapartum intervention rates in low risk women: epidural analgesia 17%; oxytocin augmentation 11.2%; vacuum assisted delivery 2.3%; caesarean section 4.3%), we wonder if, even in this context, an early admission contributes to intrapartum interventions.

1.1. Objectives

Given the identified gaps and controversies within the Italian maternity services, the primary aim of this study was to investigate the association between timing of hospital admission in the latent phase vs active phase and mode of birth. The secondary aim was to assess the relationship between timing of hospital admission and intrapartum intervention rates (oxytocin augmentation, artificial rupture of membranes and epidural analgesia) and maternal and neonatal outcomes (post-partum haemorrhage, umbilical cord arterial pH, Apgar score).

2. Methods

2.1. Setting

The study setting was an Obstetric Unit of a large maternity hospital in Northern Italy with approximately 3000 births/year. The Obstetric Unit hosts both low and high-risk women and offers one-to-one midwifery care throughout labour and birth to all women. The current hospital protocol recommends admission and transfer to the Birth Suite of all women found to be in active labour. Latent and active phase diagnostic criteria were defined according to local protocols which differ from the recommendations of international guidelines. The *latent phase* is defined as cervical dilatation $\leq$2 cm with regular or irregular uterine activity. *Active labour* is defined as cervical dilatation $\geq$3 cm together with regular uterine activity. A woman with a spontaneous rupture of membranes either in active labour or not, according to the local protocols is immediately hospitalized. After the initial assessment if a woman is not in active labour should be recommended to return home unless there is a maternal request to be admitted. Although this is the recommendation, the management is frequently left to the healthcare professional during the admission assessment, and often the decision is to admit the woman to the Antenatal ward, waiting for the established labour to start.

2.2. Participants

Records of women who gave birth from January 2013 to December 2014 were screened within the electronic birth register to identify low risk women having a hospital admission in the *Latent phase* or in *active labour*. Low risk criteria were: spontaneous labour between 37–42 gestational weeks, single fetus with cephalic presentation and maternal age within 18–45 years. The criteria adopted for the definition of low risk were the same proposed by the World Health Organization (WHO, 2002), modified for maternal age.

Exclusion criteria were: placenta previa or abruption; contraindications to vaginal birth; pre-eclampsia or eclampsia; previous history of caesarean section; pre-gestational or gestational diabetes; chronic hypertension; preterm birth; previous uterine scar; previous history of obstetric emergencies. Pre labour spontaneous rupture of membranes has been included in the exclusion criteria, due to the management protocol at the study site which recommends immediate admission of any woman with a spontaneous rupture of membranes.

A total of 5.629 maternal records were screened, 2.268 women fulfilled the low risk criteria and did not present any exclusion criteria with the exception of pre labour spontaneous rupture of membranes. A total of 822 women were excluded because of pre labour spontaneous rupture of membranes.

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