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Admission CTG - An Effective Method to Access the Fetal Income Status to the Delivery Unit

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ABSTRACT

Dysmenorrhea is one of the most usual causes of pelvic pain. It has negative effects on woman's quality of life and sometimes leads to daily activity restriction. Primary dysmenorrhea is menstrual pain without pelvic pathology. Abnormal bleeding, noncyclic pain, alteration in pain severity and duration, and abnormal pelvic examination findings propose secondary dysmenorrhea and need more assessment. Treatment options for primary dysmenorrhea are consist of non-steroidal anti-inflammatory drugs and hormonal contraceptives. Due to side effects related to such treatments, women seek complementary and alternative medicines. The aim of this paper is to evaluate the reasons for using chlorella to improve the side effects of primary dysmenorrhea.

Keywords: Primary dysmenorrhea, Chlorella, Systemic symptoms, Inflammation

INTRODUCTION

Most pregnancies result in healthy newborns, however, 1-2% of deliveries in Sweden suffer severe adverse fetal outcomes [1]. Several methods are used to try identifying which pregnancies are at risk. The problem is that we often fail to do so. For instance, a unit screening for small-for-gestational age (SGA) only identified 54% of the cases before birth [2]. Yet, we also know that for every 11 cases of severe SGA identified one case of severe adverse fetal outcome can be avoided [2].

Cardiotocography (CTG) is used worldwide to track fetal heart rate both before and during labor. A reactive, or non-reactive tracing where the fetus shows accelerations after stimulation, is considered normal and found in 95% of the cases. The remaining 5% need individual interpretations [3]. Admission CTG was introduced by Ingemarsson in 1986 as a last assessment of fetal well-being prior to birthing [3]. Admission CTG is a short fetal heart tracing (20 min) used routinely in Sweden and Finland as an admission status of the fetal well-being when arriving to the delivery unit. This is done to avoid unnecessary delay in action in cases with pre-existing fetal distress [4].

The United Kingdom, Norway and Denmark recommend only intermittent auscultation in low-risk-pregnancies as they claim that the high number of non-reassuring admission CTGs (20-30%) lead to unnecessary interventions and did not reduce delivery complications (usually assessed 5-10 h later) [5-8]. Therefore, they do not recommend the use of admission CTG.

Due to the conflicting recommendations regarding the admission CTG, we decided to do a retrospective validation study at Karolinska University Hospital, January 2011 to June 2015 (number of deliveries=40,061). All women who underwent emergency caesarean section within one hour of admittance due to suspected fetal distress were identified. An assessment was made regarding the existence and interpretation of admission CTG, if the cesarean section was beneficial and whether there were objective signs of fetal compromise. Objective signs included pH<7.15, Apgar 5 min<7, neonatal intensive care, high scalp lactate or obstetric catastrophe.

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Eighty-eight pregnancies (0.2% out of 40,061) met the inclusion criteria and underwent emergency cesarean section due to suspected fetal distress [9]. In 75% of both low- and high-risk pregnancies was admission CTG deemed to have contributed in the decision to perform emergency cesarean section. Over 90% of the 88 women who underwent emergency cesarean section had objective signs that the intervention was necessary. In 28% the CTG pathology was determined to be difficult to identify by intermittent auscultation. 88 cases or 0.2% might seem like a low number, but bear in mind that these women undergo emergency cesarean delivery to avoid complications related to asphyxia such as hypoxic ischemic encephalopathy (HIE) or stillbirth.

During the course of this study it became evident that the definition of admission CTG differed between prior publications and the routine clinical use. Prior studies have performed CTG after anamnesis and examination to assess delivery outcome (typically 5-10 h later), while in Sweden it is usually performed at arrival before anamnesis and examination, aimed to identify pre-existing fetal distress. Thus, it seems that prior studies were performed without knowledge regarding how admission CTG is implemented. This explains the contradicting results and conclusions drawn.

We believe it is naïve to believe that a short CTG tracing at admission can predict fetal outcome 5-10 h later and we agree with their conclusion that admission CTG is not a method to predict fetal outcome. Thus, regarding this question we are all in agreement – including Ingemarsson in 1986 – that admission CTG is not a method that should be used to predict delivery outcome [4-8]. Thus, we believe no further studies regarding prediction are needed.

However, we believe that it is likely that recommendation against the use of admission CTG might have caused several unnecessary asphyxic fetal complications [7-10]. Our study identified an 18-fold increased risk of intrapartum stillbirth in the only unit in Sweden not using routine admission CTG among a selected low-risk group as compared to our standard care mixed risk population (0.9/1 000 vs. 0.05/1 000) [1,11]. This unit was closed down after an assessment due too low safety and high costs. The intention of admission CTG is to get an evaluation of the fetal well-being at arrival, i.e., to identify those who are in need of emergent delivery at admission without unnecessary delay and not a prediction method to identify fetal distress 5-10 hours later.

We consider:

- Admission CTG is effective in both low- and high-risk cases in identifying the few 0.2% that need immediate action at admission with a high risk of asphyxic sequel.
- It identifies the 28% of pathological CTG tracings not possible to auscultate.
- Prior studies have misinterpreted the use of admission CTG and had therefore resulted in misleading recommendations.

We recommend all delivery units to use routine admission CTG.

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