



Combining intermittent auscultation and contraction palpation monitoring with cardiotocography in inpartu mothers[☆]



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Received 29 May 2019; accepted 15 July 2019

KEYWORDS

Combination;
Intermittent
auscultation;
Contraction
palpation;
Cardiotocography

Abstract

Objective: The midwife does not have an obligation to use cardiotocography in fetal monitoring during the labor process, thus finding an alternative way to monitor a fetal is essential in making the right decision. The present study aims to find out the accuracy of the combination of intermittent auscultation and contraction palpation monitoring with cardiotocography.

Method: Analytic descriptive was used to analyze 36 inpartu mothers chosen by purposive sampling technique. Chi-square test (Goodness of fit) is used to measure the accuracy of the combination of intermittent auscultation and contraction palpation monitoring with cardiotocography.

Result: The result of this study shows that the accuracy of the combination intermittent auscultation and contraction palpation monitoring with cardiotocography is significant ($p=0.000$, $<\alpha=0.05$).

Conclusion: It implies that monitoring by combining both aspects is suggested during labor to prevent fetal distress caused by a decrease or increase of fetal heart rate.

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[☆] Peer-review under responsibility of the scientific committee of the International Conference on Women and Societal Perspective on Quality of Life (WOSQUAL-2019). Full-text and the content of it is under responsibility of authors of the article.

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Introduction

Fetal monitoring during the preparation of birth aims to predict and diagnose fetal distress to prevent brain damage due to impaired gas exchange.¹ Fetal monitoring includes intermittent auscultation, cardiotocography (CTG), color and amniotic fluid volume assessment, biophysical profiles assessment, caput in the fetal head, and so on.¹⁻³

Cardiotocography is indicated if the fetal heart rate and abnormal uterine contraction are found during impaired intermittent.⁴ Obstetrician association states that it was better to not use the cardiotocography for routine fetal monitoring in pregnant women without complications.⁵ The effect of cardiotocography in monitoring a birth can cause the use of forceps, and vacuum extraction (ventouse), or cesarean section.⁶

Intermittent auscultation is a method of monitoring fetal heart rate within a specified period as determined and without the sign of uterine contractions.⁷ There are many previous studies that focus on intermittent auscultation. However, none of them combined the intermittent auscultation and contraction palpation as a way to monitor the labor process. The present study was essential since monitoring of fetal heart rate during contraction can help to identify the sign of fetal distress. Besides, midwife does not have a duty to use cardiotocography, thus monitoring the fetal heart rate by combining intermittent auscultation and ongoing or unexpected uterine contraction was expected to get the same results as cardiotocography.⁸

The study aimed to find out the accuracy of the combination of intermittent auscultation and contraction palpation monitoring with cardiotocography on inpartu mothers.

Method

The participants of the study were inpartu mothers at Hasanuddin University Hospital, Dr. Wahidin Sudirohusodo Hospital, and Khadijah 1 Hospital at Makassar, South Sulawesi. Moreover, the researcher worked with obstetrician-gynecologist in this study. Obstetrician-gynecologist examined a fetal heart rate by using cardiotocography, and at the same time, the researcher also examined the fetal heart rate and uterine contraction manually without paying attention to cardiotocography's results. After monitoring, the researcher wrote the result on the observation sheet, and then it was transferred into a chart. Thus, the data analysis of the accuracy in combining both methods was easy.

The data were processed by using the chi-square accuracy test (Goodness of fit) to find out the relationship among variables that have been monitored. The significant level is $\alpha = 0.05$.

The results of the study

Univariate analysis

The data of the study show the characteristics of postpartum mothers based on the women's age, pregnancy age, gravid, and types of delivery when they were monitored by

Table 1 Characteristics of respondents.

Characteristic (n = 36)		n	(%)
Mother age (year)	<25 years	9	25.0
	25–34 years	21	58.3
	>35 years	6	16.7
	Total	36	100.0
Gestational age	<37 months	7	19.4
	37–42 months	29	80.6
	Total	36	100.0
Gravid	Primipara	17	47.2
	Multipara	19	52.8
	Total	36	100.0
Type of labor	Normal	20	55.6
	Cesarean section	16	44.4
	Total	36	100

Table 2 Combination of intermittent auscultation and palpation of contraction.

Category	Frequency		p-value
	n	%	
Normal	31	86.1	0.000*
Slow deceleration	5	13.9	

* Chi-square.

combining intermittent auscultation (IA) and contraction palpation with cardiotocographic (Table 1).

The data of the study show the frequency distribution of the combination of intermittent auscultation and palpation of contraction monitoring with cardiotocography (Table 2).

Discussion

The result of the study highlights that the combination of intermittent auscultation and contraction palpation can be used by a midwife as a monitor, which has the same function as cardiotocography. The midwife can monitor the condition of a fetus well and get the same result as cardiotocography. As far as the researcher concerned, there were no previous studies that have been conducted related to this study.

Some previous studies show that intermittent auscultation has good results during monitoring continually. However, there were no previous studies that compare the use of cardiotocography and intermittent auscultation. It must be noted that although the recommendation of intermittent auscultation schedule is based on the experts' perspective, the standard of the operational procedure is essential due to the health care planning and legal-medical purposes.⁹

The fetal heart rate check on inpartu mothers in the active phase, in which cervical opening around >3 cm, was done during uterine contraction or when the contraction is about to end. It is done to detect a slow recovery of heart rate into normal. Usually, the heart rate can be maintained during and after contraction. However, at the end of labor, there were several decelerations as well as contractions which can recover quickly due to umbilical cord or fetal head compression, and these cases were normal. The

result of the study also found out a late deceleration during the monitoring.

Late deceleration is a deceleration starting at or after the peak of the uterine contraction and disappears after uterine contraction returning to the original number. Late deceleration occurs due to the disruption of uteroplacental circulation in the intervillous space area.¹⁰ Deceleration is divided into early deceleration, late deceleration, variable deceleration, and elongated deceleration.¹¹

Monitoring the fetal condition by combining both intermittent auscultation and contraction palpation is suggested to the medical staff, particularly midwife. This way can be used to substitute the use of cardiotocography, so it can help midwife to take the right decision in making referrals to infants who should be treated quickly, such as in a fetal distress state.

Conclusion

The researcher concludes that monitoring by combining intermittent auscultation and contraction palpation can have the same results as cardiotocography, which use to monitor the fetal in inpartu phase. Thus, this method can reduce the infant mortality rate.

Conflict of interest

The authors declare no conflict of interest.

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