

Angle occupied by the septal body: 95 (34.17%)

Twisted caudal border: 32 (11.51%)

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FETAL HEART RATE FEATURES AND TREATMENT EVALUATION OF ACUTE FETAL DISTRESS IN NULLIPARITY AT OBSTETRICS DEPARTMENT, CAN THO CENTRAL GENERAL HOSPITAL

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ABSTRACT

Objectives: To describe fetal heart rate (FHR) features and to assess treatment outcomes of intrapartum fetal distress in nulliparous women. **Materials & Methods:** cross-sectional study on 171 women with acute fetal distress at Obstetrics department, Cantho Central General Hospital. The factors of FHR such as baseline, variability, accelerations, decelerations, contractions and FHR result were recorded. Newborns were assessed by neonatal care methods and Apgar scores at 1 and 5 minute. The data were analyzed with SPSS 18.0. **Results:** The total rate of inconclusive and abnormal FHR was 88.89%; including 39,77% abnormalities of baseline FHR, 16.38% abnormality of variability, 14,04% absence of accelerations and 41.20% decelerations. After birth, rate of abnormalities of 1 minute Apgar score and 5 minute Apgar score was 23,98% and 10,53%, respectively; 4,68% babies were admitted to Cantho Children's Hospital and none of the newborns died. **Conclusions:** The ratio of abnormal FHR was 88.89%. The absence of accelerations and the abnormalities of baseline relate to status of newborns. 23.98% newborns had abnormal postnatal Apgar and 8 babies were admitted to Cantho Children's Hospital.

Key words: FHR, Acute Fetal Distress

I. INTRODUCTION

Acute fetal distress endangers patients and infants' lives, which is rated 9.47% and often occur in delivery. Acute fetal distress is one of the most serious causes of dead in infants and children under one year of age. Moreover, in case of late detection and treatment, the long-term sequela of the disease can cause mental and physical problem for babies. Therefore, it is important to assess fetus in nulliparity to protect fetus as well as

pregnant women.

FHR has been playing an important role in early diagnosis and treatment of the fetal distress from the end of 20th century until now. Despite low positive diagnosis and increasing of caesarean section, ACOG and RCOG continue to recommend using continuous FHR monitoring for detect acute fetal distress. Treatment is assessed by Apgar score of infant after being born.

“FHR features and Treatment Evaluation of Acute Fetal Distress in Nulliparity at Obstetrics department of Cantho Central General Hospital” was carried out to describe FHR features and to assess treatment outcomes of intrapartum fetal distress in nulliparous women at Obstetrics department, Cantho Central General Hospital.

II. MATERIALS AND METHODS

2.1. Research Materials

Pregnant women with acute fetal distress in Department of Obstetrics, Cantho Central General Hospital from June 1st 2014 to June 21st 2015

Criteria: those diagnosed with acute fetal distress by any causes with code ICD-10 was O68, first time mothers, only one fetus, gestational age ≥ 35 weeks (from first day of last menstrual period or having ultrasound scan in first 3 months of pregnancy) or full-term fetus.

Exception: Patients refused to involve in research. Mother has mental problem, malformed fetus, and stillbirth.

2.2. Research Methodology

Cross-sectional study

Steps: Diagnosis based on patients’ document and research carried out on patients who match criteria. The administrative section and some epidemiological factors were recorded.

Testing and recording the outcome of FHR factors such as baseline, variability, accelerations, decelerations, contractions and ultrasound scan.

On surveying, in Department Obstetrics at Cantho Central General Hospital, every treatment was observed by doctor on duty. After being born, infants were assessed by Apgar score at 1 and 5 minutes, and the weight was measured.

Collected data would be analyzed using SPSS 18.0

III. RESULTS AND DISCUSSION

171 patients with acute fetal distress matching research standards were picked to test and record. The results are presented on below charts:

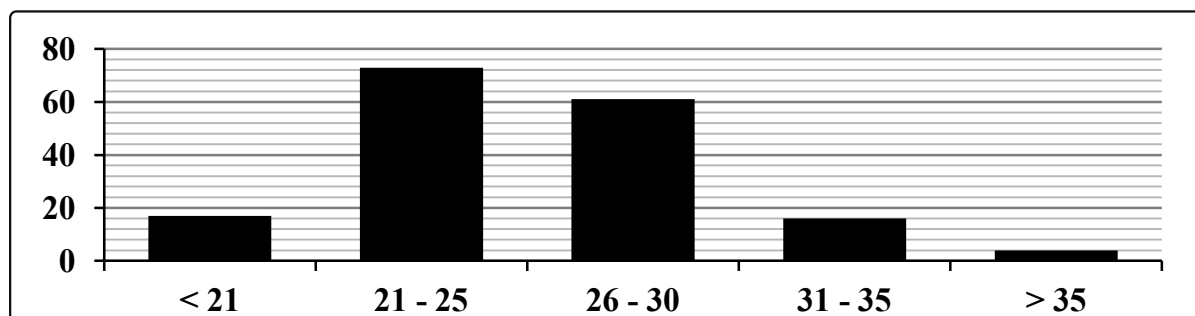


Chart 1. Age of the pregnant women

Average age on the research is 25, 56 ± 4.39 with the eldest being 42 and the youngest being 19; according to Khalil Krimissa, the average age was 28,19. Most women in the research were 21-25; as said by Nguyen Cong Trinh, the age was 26-30. Thus, women in the survey were pretty young and appropriate to the study's objectives.

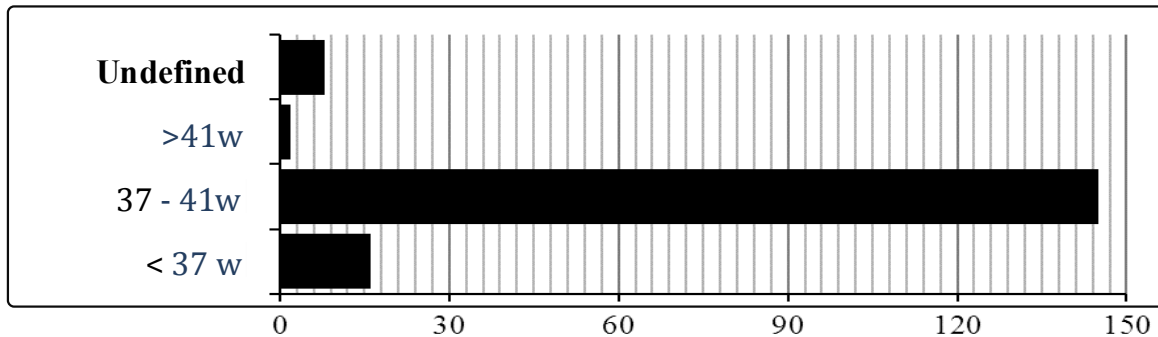


Chart 2. Age of fetus

Among acute fetal distress cases, 4.67% women whose gestational age wasn't estimated due to having no ultrasound scan were at a disadvantages

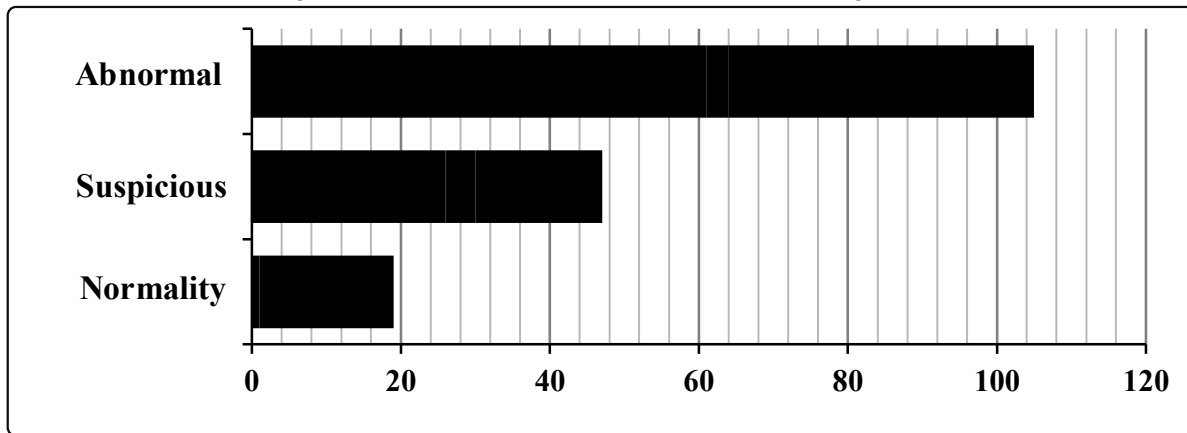


Chart 3. Result of FHR features

FHR result showed 61.40% were abnormal; 27.49% were conclusive and 11.11% were normal. Those result almost matched with Khalil Krimissa's findings in 2010 with numbers being 48.37%; 45.13% and 8.70% respectively. Despite low positive diagnosis and increasing in caesarean, using FHR to monitoring baseline to detect the distress and to prevent all acute fetal distresses is advised by most organizations

Table 1. FHR features

| | | n | % |
|---------------------|----------------------|----------|----------|
| Baseline | Normal | 103 | 60,23 |
| | Increased or reduced | 68 | 39,77 |
| Variability | Type 1 or type 2 | 24 | 14,03 |
| | Type 3 | 143 | 83,63 |
| | Type 4 | 4 | 2,34 |
| Acceleration | Yes | 147 | 85,96 |
| | No | 24 | 14,04 |
| Deceleration | No | 92 | 53,80 |
| | Dip I | 14 | 8,19 |

| | | n | % |
|--------------------|---------|----------|----------|
| | Dip II | 23 | 13,45 |
| | Dip III | 42 | 24,56 |
| Contraction | Normal | 165 | 96,50 |
| | Peak | 6 | 3,50 |

Most of women in the study were in normal baseline, which was similar to Nguyen Ngoc Phuong Thuy's research (85.39%)

The type 4 of Variability records low rate in comparison to Nguyen Ngoc Phuong Thuy's research. It's because in FHR survey period, there was difference between first stage of labor in this research and second stage of labor in Nguyen Ngoc Phuong Thuy's research.

In researcher's opinion, differences of deceleration rate between Nguyen Cong Trinh's research and this research came from difference in sampling criteria.

Table 2. Abnormal decelerations in FHR

| N = 79 | | n | % |
|----------------------------|--|----------|----------|
| Sudden decelerations | | 45 | 56,96 |
| Progressive decelerations | | 23 | 29,11 |
| Prolonged decelerations | | 11 | 13,92 |
| N = 79 | | n | % |
| Mild decelerations | | 169 | 98,83 |
| Severe decelerations | | 2 | 1,17 |
| N = 79 | | n | % |
| Intermittent decelerations | | 148 | 86,55 |
| Repeated decelerations | | 23 | 13,45 |

Table 3. Apgar score in 1st and 5th minute

| | | n | % |
|-----------------------|-------------|----------|----------|
| Apgar 1 minute | < 4 score | 130 | 0,59 |
| | 4 - 6 score | 40 | 23,39 |
| | ≥ 7 score | 1 | 76,02 |
| Apgar 5 minute | < 4 score | 0 | 0,00 |
| | 4 - 6 score | 18 | 10,53 |
| | ≥ 7 score | 153 | 89,47 |

Proportion of 1 minute Apgar score was grouped into <4, 4-6 and ≥ 7, which has much relevance to Tran Hong Nhan's research, with rate being 6.31%; 28.57%; 65.12% respectively. After 5 minutes, the rate of infant with good Apgar score was over 80.00%

After neonatal resuscitation, the rate of infants who needed transferring to Can Tho Pediatric hospital was 4.68%. It showed that despite early diagnosis and prompt treatment of acute fetal distress, a proportion of children still faced the risk of death shortly after birth.

Table 4. Relevance among FHR features and Apgar score

| | P | OR | 95% CI |
|---------------------|----------|-----------|---------------|
| FHR | > 0,05 | | 0,65 - 13,28 |
| Baseline | > 0,05 | | 0,91 - 2,77 |
| Variability | < 0,05 | 2,44 | 1,03 - 5,75 |
| Acceleration | < 0,01 | 5,02 | 2,03 - 12,38 |
| Deceleration | > 0,05 | | 0,44 - 1,79 |
| Contraction | > 0,05 | | |

There is no relevance among FHR result, baseline, deceleration, and contraction in infants

The proportion of baby with low Apgar score of women having abnormal variability was 2.44 times (95% CI = 1.03 to 5.75) higher than that of women with normal variability. The difference was significant in Statistic ($P < 0.05$).

Babies with Apgar < 7 born to women without acceleration were 5.02 times higher (95% CI = 2.03 to 12.38) than those of women with acceleration. The difference is meaningful in Statistical ($P < 0.01$).

IV. CONCLUSIONS

Average age of research women was 25, 56 ± 4.39 . 4.68% women have no gestational age estimation. Abnormal FHR rate is 88.89% with 39.77% abnormal baseline, 16.3% unusual variability, 14.04% without acceleration and 46.20% in deceleration.

On ultrasound scan, oligohydramnios accounted for 18.71% and nuchal cord accounted for 19.30%. Abnormal variability and acceleration will affect newborns. 23.9% of infant scored Apgar < 7 1 minute after being born, and 10.53% after 5 minutes. Infants needed to be transfer to Can Tho pediatric Hospital accounted for 4.68%.

Recommendation

FHR is the best subclinical test to detect abnormal fetal heartbeat before any color changes in amniotic fluid. Despite low positive diagnosis and increasing in caesarean, FHR still needs to be applied in nulliparous women to detect acute fetal distress as soon as possible.

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