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**FETAL CARDIOTOGRAPHY
INTEGRATED IN ANTENATAL
EVALUATION IN THE DIAGNOSIS OF
ACUTE FETAL HYPOXIA**

SCIENTIFIC COORDINATOR

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GENERAL PART

The paper aims at researching and establishing correlations between fetal cardiotocographies performed ante partum or intrapartum, with or without associated pathology, with abnormal cardiotocographic changes, highly suggestive for acute fetal distress, which led to the completion of birth by Caesarean section and APGAR score obtained at birth, reflecting the newborn state post partum.

The essential role of fetal cardiotocographic monitoring is to assess the fetal status in the third trimester of pregnancy and especially during the labour. The early detection for avoiding the acute fetal hypoxia by establishing an immediate therapeutic conduct has the role to significantly reduce the consequences of hypoxic specific fetal complications, and also the neonatal morbidity and mortality.

The parameters followed during the fetal monitoring are divided into two main groups:

1. Parameters of the fetal baseline heart rate : the normal fetal heart rhythm, fetal bradycardia, fetal tachycardia and the variability of the basic rhythm

2. Parameters representing changes of the fetal baseline heart rate: acceleration and early, late, prolonged and variable deceleration.

The terminology used for considering a normal, abnormal or undetermined cardiotocographic route was established in 2008 in the congress organized by the National Institute of Child Health and Human Development with the following ideas:

- The fetal heart normal baseline with a value between 110-160 bpm;

- Normal variability: a bandwidth amplitude of 5-25 bpm.

- variable decelerations: absent;

- Late decelerations: present or absent;
- Present or absent accelerations

Depending on the criteria of the normal cardiotocographic graph, it was explained what is an abnormal or undetermined cardiographic route and the cardiographic applications for evaluating the fetal status as it is the non-stress test and biophysical score

PRACTICAL PART

I.OBJECTIVE

The paper tries to established some clearer cardiotocographic criteria for detecting the incipient acute fetal distress, with lower rates of neonatal morbidity and mortality depending on the correlation between the current cardiotographic pathology the pregnancy pathology and the APGAR score achieved at childbirth.

II.MATERIALS AND METHODS

The study included a group of 210 patients hospitalized in the period September 2013-September 2015 in the University Clinic of Obstetrics and Gynecology at the County Hospital Craiova, with age ranging between 28 and 42 gestational weeks. It has to be mentioned that pregnant women included in the

study showed no selection criterion as being in labour. Only a percentage of the study group was admitted in labor with or without ruptured membranes, the rest of the group had as admission diagnosis false labor, present uterine contractility or high risk pregnancy for fetal monitoring. To all hospitalized pregnant women was performed at least one cardiotocographic tracing ante-partum or intra-partum, in labor, in order to determine fetal status, being diagnosed with acute fetal distress which led to immediate completion of birth by caesarean section.

III.RESULTS AND DISCUSSION

For the group of 210 pregnant women, it was considered a distribution of pathology in maternal and fetal pathology and there were studied the cardiotocographic abnormal tracing in each section. The pathology included maternal gestational diabetes, gestational hypertension , cicatricial uterus, maternal

anemia, prolonged pregnancy and fetal pathology included intrauterine growth restriction, oligohydramnios, premature birth, Rh - immunization, previa placenta, dystocia of presentation and other unclassifiable pathologies.

Every pathology was classified according to age, parity, gestational age of pregnancy, APGAR score and abnormal cardiotocographic parameters present in the cardiotocographic interpretation and correlation with the obtained Apgar score.

IV.CONCLUSIONS

The ante-partum and intra-partum cardiotocographic monitoring with the role of detecting in an early stage the acute fetal distress, lead to 55% false positive APGAR score over 7 obtained at birth, in direct correlation with cardiotocographic pathology present on the tracing. Considering that all pregnant women had cardiotocographic changes suggestive for

acute fetal hypoxia, but only 98 cases out of 210 presented an Apgar score under 7, the most probable association could be considered a transient fetal pathology or one of the fetal annexes, clinical not detectable .

Of the 210 patients, a total of 98 newborns had Apgar score at birth 7, without a further fetal monitoring. From the 98 cardiotocographies included in this category, the variable decelerations experienced the highest percentage, 71.5% being strongly suggestive for acute fetal hypoxia. The second pathology as a percentage (40.8%) was bradycardia, both moderate and severe ones. Severe bradycardia, is associated in 95% of the tracing with an Apgar score lower than 5, especially being present in all routes to that newborns had the Apgar score 0 at birth in combination with the absence of variability (6 newborns died later). The fetal tachycardia was associated only a small percentage (15.3%) with Apgar score under 7 and is generally associated with minimal variability and variable

decelerations in that context. The marked variability was present in a small percentage (3%) to establish a definite fetal indication. Instead, the minimal variability was present in 50% of cardiotocographic routes with the APGAR score under 7 and the absence of variability in proportion of 75% for APGAR scores under 5.

Correlating the cardiotocographic antenatal fetal monitoring with the fetal ultrasound examination competence, but also with selected and trained medical staff fetal hypoxia can be detected in an early stage especially at women with high obstetrical risk.
