

Intrapartum Foetal Heart Rate Monitoring



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It was in 1848 it was put forth that abnormal fetal heart rates were associated with fetal distress (Kilian). Since then Obstetricians and midwives used intermittent auscultation with fetoscope to auscultate the fetal heart rate; the goal being early identification of the fetus at risk of hypoxia.

Electronic fetal monitoring was introduced in the 1970's and a continuous recording of fetal heart as well as uterine contractions was possible allowing improved analysis of fetal heart rate pattern abnormalities. By the late 1970's enthusiasm for this technology, which was meant to reduce the consequences of fetal asphyxia, led to it being very widely used by Obstetricians before its efficacy could be clearly documented.

E.F.M. is considered a factor for the Caeserean Section rates for fetal distress increasing rapidly. Also in 1988 American College of Obstetricians and Gynaecologists (ACOG) after considerable debate reported that E.F.M. Offered no benefit over intermittent auscultation in labour management.

Despite this the use of E.F.M. is steadily increasing. FHR monitoring is capable of detecting hypoxic episodes well

before the development of asphyxia or acidosis and prevent poor perinatal outcome.

There was no agreement on E.F.M. terminology, definition, and treatment guidelines till 1997 when the National Institute of Child Health and Human Development (NICHD) published standardized unambiguous definitions of FHR tracings.

The definitions applied to the interpretation of patterns produced from either a direct fetal electrode detecting the fetal electro-cardiogram or an external Doppler device detecting the FHR events and though primary emphasis is on intrapartum patterns, they are also applicable to antepartum observations and these are characterized as baseline, periodic, or episodic. Fetal heart rate patterns of deceleration, acceleration, and variability were also defined.

The ACOG Committee on Obstetric practice has recommended to replace the term fetal distress which is not precise or specific with "Non-reassuring fetal status". A non reassuring fetal pattern according to ACOG is consistent with the delivery of a healthy infant.

Additional techniques are required to help differentiate between normal and abnormal fetuses with non-reassuring fetal heart rate patterns. These include fetal blood scalp sampling, fetal stimulation testing, ST segment analysis, Cardiac ejection fraction testing and fetal pulse oximetry of which fetal pulse oximetry may turn out to be most practical, reliable and helpful.

Electronic Fetal Heart Rate Monitoring is good at identifying the non compromised fetus. When the fetal heart rate pattern is reassuring, the outcome is invariably good. If the fetal heart rate pattern is Non-Reassuring, most fetuses will still have a good outcome when intervention occurs.

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Readers Corner

In tune with the changes implemented in our Journal from 1998, the Editorial Board has decided to publish readers' comments and queries "strictly pertaining to the various articles and case reports published in the Journal."

Letters received from the readers will be subjected to Editorial scrutiny and published only at the discretion of the Editors with the original author's reactions when necessary. Publication of these letters will also depend upon the availability of space in the Journal.

We welcome relevant comments and queries from the readers.

Editorial Board