PATTERN OF ARRHYTHMIA

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Abstract

Arrhythmias are very common complications found during pregnancy. They are de-novo in some pregnancies or may complicate other arrhythmias present before pregnancy. Likely major arrhythmogenic complications needing intervention are not common.

Keywords: Arrhythmia, pregnancy.

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1. BACKGROUND

Arrhythmias are very common complications found during pregnancy (1). They are de-novo in some pregnancies or may complicate other arrhythmias present before pregnancy (2). Likely major arrhythmogenic complications needing intervention are not common.

9% of deaths that occurs during pregnancy in patients without structural heart disease are found to be due to sudden cardiac death which puts in mind that the cause may be arrhythmogenic, on the other hand, cardiac arrhythmia is a major predictor of having cardiac event in patients with structural heart disease and so treatment is important (3).

Incidence of Arrhythmias in Pregnancy:

Sinus tachycardia is very common during pregnancy especially in last trimester due to increase in heart rate by about 25%. Ectopic beats and paroxysmal arrhythmia are found in up to 50% of pregnant women searched for arrhythmia, while sustained arrhythmia are found in about 0.03%. (4-6).

Supraventricular tachycardia is the most common sustained arrhythmia during pregnancy, followed by atrial fibrillation and lastly comes the ventricular arrhythmias. (7, 8)

There are gender variations in the incidence of arrhythmia, symptomatic atrial re-entrant tachycardia, A-V nodal re-entry tachycardia, long QT syndrome and torsade de piontes are more common in female, while atrial fibrillation is more common in males. Bradycardia is not common during pregnancy (1-20000 of pregnant women) and usually complicates congenital heart disease (9).

Mechanism of Arrhythmia During Pregnancy:

The exact mechanism of arrhythmia during pregnancy is still not clear, it may be due to one or more of heamodynamic, hormonal and autonomic causes. Heart rate increases by 30-50% during pregnancy starting in 2nd month and reaches its peak in 3rd trimester, cardiac output also increase during pregnancy by 7L/M in 1st trimester and less than 9L/M in 3rd trimester, this occurs as a result of increase in stroke volume and heart rate by 15% and 30% respectively. This increase in blood volume stretches cardiac myocytes leading to early after depolarization, shortened refractoriness, slow conduction and atrial dispersion through activation of stretch-activated ion channels (10, 11). Hormonal and autonomic causes may also participate in mechanism of arrhythmia. Estrogen and progesterone were found to be pro-arrhythmogenic in animal studies and in a case report in pregnant women complaining of arrhythmia (12, 13).

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