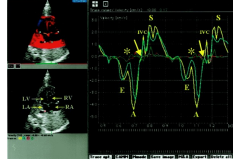


Rhythm Assessment: Tissue Doppler

- Doppler analysis of the myocardial wall motion
- Use: Can identify the time of atrial contraction and ventricular activation
- Need simultaneous signals from atrial and ventricular walls
- Not universally available on all machines

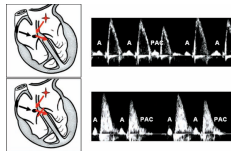


Fetal Arrhythmias

- Normal fetal heart rate: 120-180 bpm
- Arrhythmias
 - √ Types:
 - > Irregular rhythms
 - > Bradyarrhythmias
 - > Tachyarrhythmias
 - √ Incidence ~1%
 - > >90%: Premature atrial contractions, transient sinus brady/tachycardia
 - > <10% Major arrhythmia (~60% tachyarrhythmias)

Irregular rhythms

- Most common rhythm abnormality (1-2% of all pregnancies)
 - √ Most common in 3rd Trimester
- Type of ectopy:
 - √ Premature atrial contractions
 - √ Premature ventricular contractions
- Prognosis:
 - √ Mostly Benign
 - √ 0.5-1% risk of fetal tachycardia

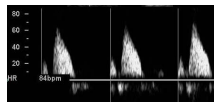


Bradyarrhythmias

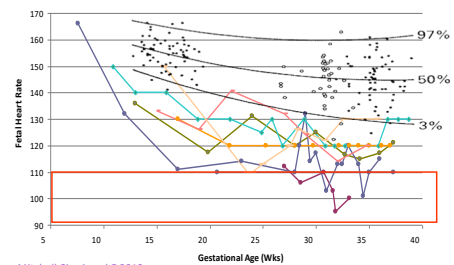
- Sustained fetal heart rate <110 bpm over at least 10 minute period
- Types:
 - √ Sinus bradycardia
 - √ Blocked premature atrial contractions
 - √ Heart block

Bradyarrhythmias

- Sinus bradycardia
 - √ Slow sinus rate
 - √ 1:1 atrioventricular conduction
 - √ Association with fetal distress or long QT syndrome



LQTS Bradycardia



Bradyarrhythmias

- Atrial Bigeminy
 - ✓ Atrial rate faster than ventricular rate
 - ✓ Every other atrial beat is non-conducted
 - ✓ To differentiate from heart block, note an inconsistent atrial rate (every other beat varies)

