**7th** FETAL MEDICINE & OBSTETRIC ULTRASOUND SCAN WORKSHOP

**ADVANCED COURSE: 31ST MAY – 4TH JUNE, 2021.**

**Full Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Phone No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Please answer the following questions, printout and submit at arrival.**

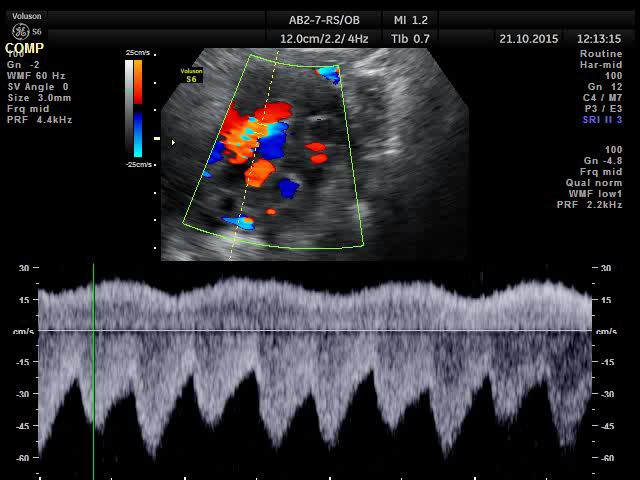
**PRE- TEST (TRUE OR FALSE)**

1. In Doppler sonography for fetuses
   1. The Umbilical Artery Doppler [UA] indicates fetal effect of hypoxia
   2. The Peak Systolic Velocity [PSV] of the Middle Cerebral Artery [MCA] can be used as screening for fetal anaemia
   3. The Pulsatility Index [PI] is a ratio of the PSV to the Peak Diastolic Velocity
   4. The Pulsatility Index [PI] and the Resistive/Resistance Index [RI] are among the most commonly used indices.
   5. The Cerebro/Placenta ratio is calculated by the ratio of the MCA PI to the UA PI.
2. Concerning commonly used fetal Doppler:
   1. The Umbilical Artery waveform is usually triphasic
   2. The resistance index (RI) in the Umbilical Artery is between 0 and 1
   3. The Pulsatility Index (PI) in the Umbilical Artery lies between 0 and 1
   4. In the interrogation of the MCA, the Pulsed-wave Doppler gate should be placed in the distal third of the vessel
   5. The velocity of the MCA is usually higher than that of the Umbilical Artery
3. Concerning fetal distress
   1. Can occur intrapartum
   2. Can occur in the antenatal period
   3. Polyhydramnios is commonly associated with fetal acidaemia
   4. Caesarean section is the best option of delivery when it occurs intrapartum
   5. May complicate preeclampsia
4. Concerning congenital anomalies
   1. They could be structural or functional
   2. Sickle cell disease is an example of a congenital anomaly
   3. Only major organs like the heart and brain are affected
   4. Babies with congenital anomalies are obvious at birth
   5. It is not necessary to screen for anomalies during pregnancy
5. The mechanisms that prepare the baby to cope with minor degree of reduction in oxygen supply include:
   1. The presence of fetal hemoglobin.
   2. Fetal hemoglobin has less affinity for oxygen
   3. A higher blood hemoglobin content
   4. A higher blood concentration of 1,3 DPG
   5. Fat and protein stores in the body
6. Features that could be observed in the mechanisms for fetal adaptation to hypoxia include:
   1. Decreased urination
   2. Increased storage of glycogen
   3. Reduction in movement
   4. Increased flow to the gastrointestinal tract to improve absorption
   5. Reduction in the Pulsatility Index of the Middle Cerebral Artery
7. Which of the following are true?
   1. An MCA peak systolic velocity above 1.5 multiples of the median may indicate fetal anemia.
   2. The ductus venosus flow is superior to cardiotocography in the evaluation of a growth-restricted fetus.
   3. Poor visualization of the cavum septum pellucidum is suggestive of agenesis of the corpus callosum.
   4. A transvaginal cervical length at 4 weeks of 25mm is an indication for vaginal progesterone.
   5. Incidental finding of a short cervix in a primigravida is an indication for cervical cerclage.
8. Which of the following is true?
   1. In the first-trimester pregnancy should be re-dated if the crown-rump length measurement is more than 4 days different from the LMP.
   2. The confidence interval for most second trimester biometric measurements on ultrasound is ± 10 days.
   3. The normal resistance in the umbilical artery measured by Doppler increases with gestational age.
   4. The finding of a reversed end-diastolic flow of the umbilical artery is an indication for immediate delivery.
   5. The middle cerebral artery Doppler has no role in the management of fetal growth restriction.
9. Which of the following is true?
   1. There are typically 2 umbilical veins and 1 umbilical artery
   2. Redistribution in IUGR can be diagnosed when there is an increased PI of the middle cerebral artery Doppler and a reduced Umbilical artery Doppler.
   3. Uterine artery Doppler has been proposed as screening for pre-eclampsia
   4. The amniotic fluid index can be used to assess adequacy of liquor after the first trimester.
   5. The twin peak sign is indicative of monochorionicity
10. **Which of the following is true about Doppler ultrasonography?**
11. Continuous wave Doppler is preferred for interrogation of the materno-fetal circulation
12. Doppler interrogation is best done during the first trimester
13. On Color flow Doppler, red and blue colors represent arterial and venous vessels respectively
14. When performing Doppler imaging, the displayed thermal index (TI) should be ≤ 1.0
15. The optimal insonation angle is 900
16. **Concerning Doppler findings in uteroplacental insufficiency:**
17. Cerebral arteries show decreased impedance to flow
18. The PI in the umbilical artery is increased
19. The PI in the middle cerebral arteries is increased
20. The ratio in PI between the umbilical artery and middle cerebral artery UA/MCA is decreased
21. In monitoring growth-restricted pregnancies, abnormal waveforms in the umbilical artery are a late sign of fetal impairment
22. **Concerning cardiotocographic FHR monitoring:**
23. External FHR monitoring is less prone to signal loss
24. inadvertent monitoring of the maternal heart rate may occur with external monitoring
25. Internal FHR monitoring is more prone to double counting
26. External monitoring is more prone to half-counting
27. Internal monitoring requires signal modulation and auto correlation for adequate quality recordings
28. **Continuous cardiotocography monitoring in labour in all parturients has been shown to:**
29. decrease the occurrence of neonatal seizures
30. decrease the occurrence of cerebral palsy
31. increase caesarean section rate
32. decrease perinatal mortality
33. improve perinatal outcomes
34. **Concerning cardiotocography:**
35. Suspicious CTG tracing requires immediate delivery
36. Prolonged decelerations are those lasting >60s
37. Decelerations are repetitive when associated with >50% of contractions
38. Sinusoidal waveform appears as a saw-toothed pattern, lasting <30min, with normal waveforms before and after it
39. Pseudosinusoidal waveform pattern may be due to maternal analgesic administration
40. **Which of the following is true?**
41. The 3D and 4D scans make use of volume probes
42. The normal resistance in the umbilical artery measured by Doppler increases with gestational age.
43. The finding of a reversed end-diastolic flow of the umbilical artery is an indication for immediate delivery.
44. The middle cerebral artery Doppler has no role in the management of fetal growth restriction.
45. An MCA peak systolic velocity above 1.5 multiples of the median may indicate fetal anemia.
46. **Which of the following is true?**
47. Polyhydramnios may be a sonologic sign of poor diabetic control in pregnancy.
48. Redistribution in IUGR can be diagnosed when there is an increased PI of the middle cerebral artery Doppler and a reduced Umbilical artery Doppler.
49. Uterine artery Doppler has been proposed as screening for pre-eclampsia
50. The amniotic fluid index can be used to assess adequacy of liquor after the first trimester.
51. The twin peak sign is indicative of monochorionicity
52. Which of the following is/are true?
    1. The normal amniotic fluid index is between 5 and 25cm
    2. In twin gestation, the amniotic fluid adequacy can be assessed using the amniotic fluid index
    3. In monoamniotic twin gestation, the amniotic fluid index measured once can be used for both twins.
    4. In amniotic fluid discrepancy in twin gestation, twin to twin transfusion syndrome should always be considered.
    5. In ultrasound scan for twin gestation, twin 1 or twin A should preferably be reserved for the presenting twin at each ultrasound evaluation in the same pregnancy
53. Concerning evaluation for twin pregnancies, the following are important:
    1. Evaluation of the amniotic fluid index
    2. Identification of the site of placental cord insertion
    3. Chorionicity and amnionicity
    4. Zygoticity
    5. Identifying labeling features for the twins
54. In basic fetal echocardiography:
    1. The left ventricle is the most anterior part of the heart on a 4-chamber view
    2. The pulmonary trunk lies to the left of the aorta in the 3-vessel view
    3. The cardiac examination typically starts with the transverse view at the level of the kidneys
    4. The additional use of colour Doppler is discouraged.
    5. In the three vessel view, the aorta is the largest of the great vessels seen
55. In fetal neurosonography:
    1. Examination of the spine is not part of the basic neurosonography
    2. The diameter of the posterior horn of the lateral ventricle increases from 20 week to 40 weeks gestation
    3. The distal ventricle to the ultrasound probe is usually easier to examine than the proximal one due to artifacts.
    4. It is essential to identify the Cavum Septum Pellucidum
    5. Basic biometric measurements of the head are essential parts of the evaluation.

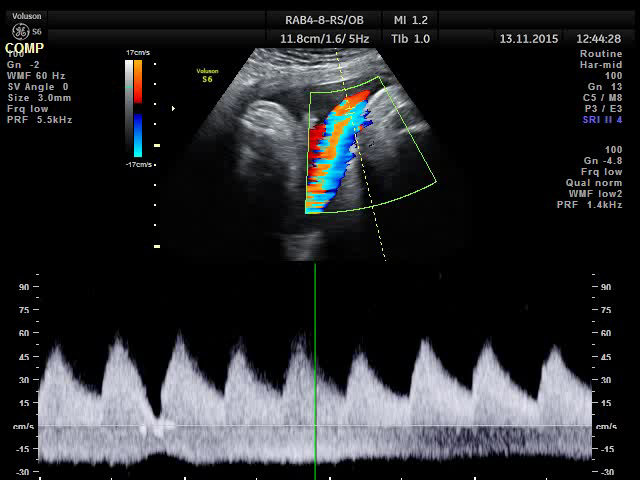
**PLEASE ANSWER THE FOLLOWING QUESTIONS**

1. WHAT VESSEL IS BEING INTERROGATED?

WHAT ASPECT OF THE TRACE IS HIGHLIGHTED AND WHY IS IT WAVY/UNDULATING?



2. WHAT NAME IS GIVEN TO THESE POINTS?



WHAT IS THE FULL MEANING OF PI AND RI

3. THIS COLOUR FLOW MAP IS OF WHAT ARCADE



WHAT SPECIFIC VESSEL IS HIGHLIGHTED