This spring, the American Institute in Ultrasound in Medicine (AIUM), released revised AIUM Practice Guidelines titled *AIUM Practice Parameter for the Performance of Limited Obstetric Ultrasound Examinations by Advanced Clinical Providers* in the Journal of Ultrasound in Medicine. That document provides new directives for performing limited OB ultrasounds (LOBU).

The Guidelines underscore a foundational premise regarding OB sonography stating: “OB ultrasounds should only be performed when there is a valid medical reason, and using the lowest possible ultrasonic exposure to gain necessary diagnostic information.”

Diagnostic information for limited obstetric ultrasounds is described in the document as follows.

**Indications for Limited First-Trimester Exams:** (up to 13 6/7 weeks from LMP) include but are not limited to:

1. Confirmation of the presence of an intrauterine pregnancy. These exams include evaluation of the presence, size and number of gestational sac(s) to confirm an intrauterine pregnancy. The gestational sac should be examined for the presence or absence of a yolk sac and the embryo/fetus. A definitive diagnosis if an intrauterine pregnancy can be made when an intrauterine sac contains a yolk sac or embryo/fetus with cardiac activity is visualized.

2. Confirmation of cardiac activity; when imaged, cardiac activity should be measured by M-mode imaging. The Guidelines add, “**Pulsed Doppler should not be used in the first trimester to “hear” the embryonic heartbeat.”**

3. Estimation of gestational age: The embryo/fetus should be measured with a crown-rump-length (CRL). The uterus, cervix, adnexa and cul-de-sac region should be examined.

**Limited Second- or Third-Trimester Examinations:** These may be utilized to answer a specific question, which might include cardiac activity, fetal presentation, evaluation of fetal number, and other information requested by the provider (e.g. amniotic fluid index, biophysical profile). **The LOBU exam does not include evaluation of fetal anatomy.** A standard or detailed examination has been already performed or should be during the pregnancy. When performing biometric measurements, it is necessary to have familiarity with the midline falx, thalami, cavum septi pellucidi, etc. for accuracy in measurements to access fetal age.

**LOBU Safety Considerations:** The Guidelines list relevant statements from the AIUM regarding LOBU safety. These should be understood for safe use of ultrasound. Those relevant AIUM Official Statements (which can be accessed at aium.org) are listed below with pertinent statements added in quotes:

*As Low as Reasonably Achievable (ALARA) Principle:* “The potential benefits and risks of each examination should be considered. The ALARA Principle should be observed when adjusting controls that affect the acoustical output and by considering transducer dwell times.”

**Recommended Maximum Scanning Times for Displayed Thermal Index (TI) Values:** “The principle of ALARA should be followed so that
examination times are only as long as necessary to produce a useful diagnostic result.”

Statement on Measurement of Fetal Heart Rate: “M-mode is the only ultrasonographic method recommended for measuring the fetal heart rate. Because there is no indication for heart rate to be “heard” by spectral Doppler, spectral Doppler should not be used to measure heart rate.”

Statement on the Safe Use of Doppler Ultrasound During 11–14 Week Scans (or earlier in pregnancy): “The use of Doppler ultrasound during the first trimester is currently being promoted as a valuable diagnostic aid for screening for and diagnosis of some congenital abnormalities. The procedure requires considerable skill, and subjects the fetus to extended periods of relatively high ultrasound exposure levels.”

NIFLA comment: Diagnostic use of Doppler to screen for congenital abnormalities is NOT part of LOBU in the PMC; therefore, there is no indication for its use.

Prudent Use in Pregnancy: “The AIUM advocates the responsible use of diagnostic ultrasound and strongly discourages the non-medical use of ultrasound for entertainment purposes. The use of ultrasound without a medical indication to view the fetus, obtain images of the fetus, or determine the fetal gender is inappropriate and contrary to responsible medical practice. Ultrasound should be used by qualified health professionals to provide medical benefit to the patient.”

Conclusions Regarding Epidemiology for Obstetric Ultrasound: “Based on the epidemiologic data available and on current knowledge of interactive mechanisms, there is insufficient justification to warrant conclusion of a causal relationship between diagnostic ultrasound and recognized adverse effects in humans.”

NIFLA comment: This responds to a study which posed possible association of fetal ultrasound to autism.

Keepsake Fetal Imaging: “Although the general use of ultrasound for medical diagnosis is considered safe, ultrasound energy has the potential to produce biological effects. Ultrasound bioeffects may result from scanning for a prolonged period, inappropriate use of color or pulsed Doppler ultrasound without a medical indication, or excessive thermal or mechanical index settings. The AIUM encourages patients to make sure that practitioners using ultrasound have received specific training in fetal imaging to ensure the best possible results.”

NIFLA comment: Ultrasound energy is converted to heat in the body. PMCs are urged to not prolong scanning the unborn excessively once diagnostic information is obtained.

Clearly, the above statements do not support the use of Doppler in the PMC setting as there is no medical indication for its use. Further, there exists the possibility that excess ultrasound exposure could be harmful to unborn babies. Doppler use has previously been addressed Clinic Tips in March 2011, August 2013, and July 2004, which are available on our website – www.membership.nifla.org.

Summary: NIFLA promotes legal and safe use of LOBU in the PMC setting. Use of Doppler without medical indication is not necessary to demonstrate life of the unborn. Seeing the beating heart is clear evidence of life. PMCs must avoid unnecessary risks of harming our smallest patients. Your organization’s credibility in the community is strengthened and legal liability risks are reduced with diligence to practice in accordance with current nationally recognized guidelines.

By Thomas Glessner, President, NIFLA
Audrey Stout, Vice President of Medical Services
admin@nifla.org / astout@nifla.org
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