OHCA Guideline

Medical Procedure Class:	Doppler Velocimetry of the Middle Cerebral Artery
Initial Implementation Date:	11/01/2018
Last Review Date:	9/19/2025
Effective Date:	12/1/2025
Next Review/Revision Date:	December 2028

* This document is not a contract, and these guidelines do not reflect or represent every conceived situation. Although all items contained in these guidelines may be met, this does not reflect or imply any responsibility of this agency or department to change the plan provision to include the stated service as an eligible benefit.

☐ New Criteria ☒ Revision of Existing Criteria

Summary

Purpose:	To provide guidelines to assure medical necessity and consistency in the prior authorization process.

Definitions

Alloimmunization-an immune response generated in an individual or strain of one species by an alloantigen from a different individual or strain of the same species.

Bradyarrhythmia- slow heart rate and irregular rhythm.

Chorioangioma-benign vascular malformation of the placenta.

Doppler-type of ultrasound that involves measuring a change in frequency when the motion of vascular flow is measured.

FGR- fetal growth restriction; an estimated weight of the fetus below the 10th percentile for gestational age.

HDFN-hemolytic disease of the fetus and newborn; often called erythroblastosis fetalis, is a blood disorder that occurs when the blood types of a mother and baby are incompatible.

Hydrops fetalis-build-up of fluid that can lead to or result from congestive heart failure and possibly result in death.

Isoimmunization-the development of a specific antibody as a result of antigenic stimulation with material contained on or in the red blood cells of another individual of the same species.

MCA-middle cerebral artery.

MoM-multiples of the median; a measurement of how far an individual test result deviates from the median.

Multiple gestation-a pregnancy in which there are two or more fetuses.

PSV-peak systolic velocity; the maximum velocity in a specific blood vessel during the cardiac cycle

Tachyarrhythmia-rapid irregular heart rate.

TAPS-twin anemia polycythemia sequence.

TTTS-twin to twin transfusion syndrome; condition of abnormal blood circulation occurring in the placenta when identical twins share the blood vessels; blood flows from one twin (the donor) to the other twin (the recipient), causing both to have increased health risks.

Umbilical vein varix-dilation of the fetal umbilical vein as it runs through the fetal abdomen.

Description

(CPT 76821) Doppler Velocimetry; Middle Cerebral Artery measures blood flow velocity in the middle cerebral artery.

Moderate to severe anemia can be identified in a fetus via increases in the peak velocity of systolic blood flow in the MCA. A decrease in the fetal hemoglobin will cause an increase in the MCA PSV. Severe fetal anemia can be the result of a variety of conditions such as alloimmunization, fetal hydrops, fetal infection, or other acquired or congenital causes.

Monitoring the MCA PSV can be used as a substitution for amniocentesis in evaluating a fetus at risk for anemia secondary to alloimmunization.

Assessment may also be indicated if a fetus is at high risk for fetal anemia due to other pregnancy complications such as chorioangioma, umbilical vein varix, findings of sustained fetal tachyarrhythmia or bradyarrhythmia or a known congenital heart defect with suspected heart failure in the fetus.

Monitoring of MCA doppler in surveillance for twin-to-twin transfusion syndrome (TTTS) is considered by OHCA to be experimental at this point except in circumstances of prior laser ablation of the communicating vessels as a treatment for TTTS, where one is screening for development of twin anemia polycythemia sequence (TAPS).

Treatment for severe fetal anemia and TAPS is a blood transfusion given in utero. Treatment for TTTS is serial reduction amniocentesis or fetoscopic laser ablation therapy.

CPT Codes Covered Requiring Prior Authorization (PA)

76821 (see CPT manual for definition of code)

Approval Criteria

I. **GENERAL**

A. Medical Necessity must be met. All documentation submitted to request services or substantiate previously provided services must demonstrate through adequate objective medical records, evidence sufficient to justify the member's needs for the service in accordance with the **OAC 317:30-3-1(f)(2)** .
B. Documentation for **ALL 76821 Doppler Velocimetry; Middle Cerebral Artery** requests must include:
   1. An order from a contracted qualified health professional who is a Board Eligible/Board Certified Obstetrician-Gynecologist (OB-GYN) or a Board Eligible/Board Certified Maternal Fetal Medicine (MFM) specialist; **AND**
   2. Maternal fetal records including previous ultrasounds, BPP's, NST's and/or other testing that clearly supports the requested service ; **AND**
   3. Clinical documentation detailing the current treatment related to the diagnosis being monitored and/or documentation supporting the need for increased testing.

II. **INDICATIONS**

A. Screening for fetal anemia due to one of the following:
   1. Alloimmunization/Rh Isoimmunization
      a. Maternal antibody titers ≥ 1:8 for any of the following:
         1. Rhesus antibodies (Cc/Dd/Ee)
         2. Anti-Duffy (i.e., anti-fya, anti-fyb) antibody
         3. Anti-Kidd antibody

4. Other antibody known to cause hemolytic disease of the fetus and newborn (HDFN)
2. Anti-Kell antibody (any antibody titer warrants additional evaluation)
3. If evidence of hydrops fetalis on previous imaging
4. Prior pregnancy associated with HDFN (hemolytic disease of the fetus and newborn)
5. Confirmed parvovirus B-19 infection
6. Fetus at high risk for fetal anemia due to other pregnancy complications
   a. chorioangioma
   b. umbilical vein varix
   c. finding of sustained fetal tachyarrhythmia or bradyarrhythmia
   d. known congenital heart defect with suspected heart failure in the fetus

B. Screening for TAPS is only indicated in the setting of prior laser ablation of the communicating vessels in the placenta in order to treat TTTS.

III. FREQUENCY

A. Begin to monitor MCA Doppler ultrasound (76821) at ≥ 20 weeks gestation. For MCA PSV less than 1.3 MoM, repeat every two weeks. Monitoring frequency may be increased to once weekly if MCA PSV > 1.3 MoM.
B. For confirmed parvovirus B-19 infection begin to monitor every 1 to 2 weeks, starting at time of confirmed infection (if ≥16 weeks); continue imaging for 8 to 12 weeks after initial date of exposure.
C. For suspected TAPS, begin monitoring only after laser ablation and then no more often than every two weeks.

Additional Information

Requests for MCA testing (76821) outside the parameters in III A, B and C under Approval Criteria - Frequency, should include clinical documentation that demonstrates medical necessity as such and should be forwarded to the medical director for review.

References

1. Oklahoma Health Care Authority; Policies & Rules, OAC 317: 30-3-1(f)(2); 317:30-5-22.1
2. Thomas, J., Malliga, A., & Sethurajan, S. (2018). Significance of umbilical artery doppler velocimetry in the perinatal outcome of growth restricted fetuses. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 7(3), 1074-1078. doi: http://dx.doi.org/10.18203/2320-1770.ijrcog20180895
3. Ultrasound in pregnancy. Practice Bulletin No. 175. American College of Obstetricians and Gynecologists. Obstet Gynecol 2016;128: e241–56. www.aium.org/resources/files/PB175_Ultrasound_in_Pregnancy.pdf
4. ACOG Practice Bulletin No. 134: Fetal Growth Restriction. Obstetrics & Gynecology: May 2013 - Volume 121 - Issue 5 - p 1122–1133 doi: 10.1097/01.AOG.0000429658.85846.f9
5. Tollenaar LSA, Lopriore E, Faiola S, et al. Post-Laser Twin Anemia Polycythemia Sequence: Diagnosis, Management, and Outcome in an International Cohort of 164 Cases. *J Clin Med*. 2020;9(6):1759. Published 2020 Jun 5. doi:10.3390/jcm9061759
6. American College of Obstetricians and Gynecologists (ACOG). Indications for outpatient antenatal fetal surveillance: ACOG Committee Opinion, Number 828. Obstet Gynecol. 021;137(6):e177-e197.