KAISER PERMANENTE®

Kaiser Foundation Health Plan of Washington

Clinical Review Criteria
UltraCom Scan for Hypertension in Pregnancy

Criteria

For Medicare Members

Source	Policy
CMS Coverage Manuals	None
National Coverage Determinations (NCD)	None
Local Coverage Determinations (LCD)	None
Local Coverage Article (LCA)	None
Kaiser Permanente Medical Policy	Due to the absence of a NCD, LCD, or other coverage guidance, Kaiser Permanente has chosen to use their own Clinical Review Criteria, "UltraCom Scan for Hypertension in Pregnancy," for medical necessity determinations. Use the Non-Medicare criteria below.

For Non-Medicare Members

There is insufficient evidence in the published medical literature to show that this service/therapy is as safe as standard services/therapies and/or provides better long-term outcomes than current standard services/therapies.

The following information was used in the development of this document and is provided as background only. It is provided for historical purposes and does not necessarily reflect the most current published literature. When significant new articles are published that impact treatment option, Kaiser Permanente will review as needed. This information is not to be used as coverage criteria. Please only refer to the criteria listed above for coverage determinations.

Background

Preeclampsia is a major cause of maternal and perinatal morbidity and mortality. Among pregnant women, cardiac output may be associated with increased risk of preeclampsia. UltraCom is a continuous-wave Doppler computer that measures cardiac output. Using UltraCom, at-risk women can be identified and treatment to reduce maternal and neonatal adverse outcomes can be initiated.

Medical Technology Assessment Committee (MTAC)

UltraCom Scan

2/14/2001: MTAC REVIEW

Evidence Conclusion: This review addresses three questions:

1. Does UltraCom accurately measure cardiac output?
2. Is high cardiac associated with preeclampsia?
3. Does treatment of women with high cardiac output reduce the risk of preeclampsia?

Question 1: There were two small studies evaluating the validity of the UltraCom test. Both studies found a high correlation between the results of UltraCom testing and thermodilution. However, the sizes of the samples (n=11 and n=12) are insufficient to show that the UltraCom test can accurately measure cardiac output compared to the best available alternative test. (Easterling 1987, 1990 Am J Perinatol)

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Question 2: There was one prospective cohort study that suggests an association between cardiac output and preeclampsia. However, this study did not control for confounding, particularly weight. The association between cardiac output and preeclampsia could be due to the weight differences between the two groups of pregnant women rather than cardiac output differences. (Easterling 1990)

Question 3: There was one small randomized controlled trial that found that women with high cardiac output who were treated with atenolol had a lower rate of preeclampsia than women with high cardiac output who were given placebo. Nulliparous women treated with atenolol also had babies that weighed significantly less than women treated with placebo. (Easterling, 1999). This single study provides insufficient evidence to draw conclusions about the effect of screening with UltraCom and subsequent treatment with atenolol on maternal and neonatal health outcomes. There is no evidence on the effectiveness of any other type of treatment.

All of the available studies on the use of UltraCom with pregnant women were done by a single group of researchers. Generally, replication by various groups of researchers in different settings provides stronger effectiveness data. Moreover, these researchers are based at University Hospital, University of Washington, which is marketing the UltraCom test for pregnant diabetic women; we cannot exclude the possibility of a conflict of interest that might bias the research methodology.

Articles: The Medline search only identified articles that were on related topics (Doppler technique, uterine artery Doppler ultrasound) but not on empirical studies evaluating UltraCom in pregnant women. Dr. Ruth Krauss listed the citation for one article. References in that article yielded 3 other relevant articles. Evidence tables were created for these four articles. Easterling TR, Brateng D, Schmucker B, Brown Z, Millard SP. Prevention of preeclampsia: A randomized trial of atenolol in hyperdynamic patients before onset of hypertension. Obstet Gynecol 1999; 93: 725-33. See Evidence Table. Easterling TR, Benedetti TJ, Schmucker BC, Millard SP. Maternal hemodynamics in normal and preeclamptic pregnancies: A longitudinal study. Obstet Gynecol 1990; 76: 1061-9. See Evidence Table. Easterling TR, Watts DH, Schmucker BC, Benedetti TJ. Measurement of cardiac output during pregnancy: Validation of Doppler technique and clinical observations in preeclampsia. Obstet Gynecol 1987; 69: 845-50. See Evidence Table. Easterling TR, Carlson KL, Schmucker BC, Brateng DA, Benedetti TJ. Measurement of cardiac output in pregnancy by Doppler technique. Am J Perinatol 1990; 7: 220-222. See Evidence Table.

The use of UltraCom Scan in the screening and treatment of hypertension in pregnancy does not meet the *Kaiser Permanente Medical Technology Assessment Criteria*.

Applicable Codes

Considered Not Medically Necessary:

CPT® or HCPC Codes	Description
No specific codes	

***Note:** Codes may not be all-inclusive. Deleted codes and codes not in effect at the time of service may not be covered.

****To verify authorization requirements for a specific code by plan type, please use the **Pre-authorization Code Check**.

Date Created	Dates Reviewed	Date Last Revised
02/14/2001	04/04/2011 MDCRPC, 02/07/2012 MDCRPC, 12/04/2012 MDCRPC, 10/01/2013 MPC, 08/05/2014 MPC, 06/02/2015 MPC, 04/05/2016 MPC, 02/07/2017 MPC, 12/05/2017 MPC, 01/09/2018 MPC, 11/06/2018 MPC, 11/05/2019 MPC, 11/03/2020 MPC, 11/02/2021 MPC, 11/01/2022 MPC	04/04/2011

MDCRPC Medical Director Clinical Review Policy Committee

MPC Medical Policy Committee

Revision History	Description

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