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Medical Policy Manual

Topic: Placental Rapid Immunoassay for Detection of Fetal Membrane Rupture (AmniSure® and ROM Plus® Tests)

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Section: Laboratory

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IMPORTANT REMINDER

Medical Policies are developed to provide guidance for members and providers regarding coverage in accordance with contract terms. Benefit determinations are based in all cases on the applicable contract language. To the extent there may be any conflict between the Medical Policy and contract language, the contract language takes precedence.

PLEASE NOTE: Contracts exclude from coverage, among other things, services or procedures that are considered investigational or cosmetic. Providers may bill members for services or procedures that are considered investigational or cosmetic. Providers are encouraged to inform members before rendering such services that the members are likely to be financially responsible for the cost of these services.

DESCRIPTION

Premature Rupture of Membranes and Preterm Premature Rupture of Membranes[1]

Premature rupture of membranes (PROM) refers to the rupture of the amniotic and chorionic membranes before the onset of labor. At term or near term, PROM may result in normal labor.

In contrast, preterm PROM (PPROM) refers to the rupture of fetal membranes before 37 weeks of gestation. PPROM is associated with significantly increased risk of fetal morbidity and mortality.

Diagnosis

Usually, the diagnosis of PROM can be established by:

- Medical history
- Physical examination (including sterile speculum examination)
- Standard clinical tests (i.e., nitrazine test, ferning, assessment of pooling, smear combustion)

In cases when medical history and findings from physical examination and clinical tests are equivocal, ultrasonography to look for evidence of oligohydramnios (deficiency of amniotic fluid) may be helpful.

A questionable diagnosis can be confirmed with indigo carmine amnio-dye testing. However, this invasive test carries potential risks and is not routinely performed.

Placental Rapid Immunoassays may also be referred to as placental alpha microglobulin-1 tests.

AmniSure® ROM (Rupture Of [fetal] Membranes) Test

The AmniSure ROM Test is a rapid, noninstrumented, qualitative immunochromatographic test for the *in vitro* detection of amniotic fluid in the vaginal secretions of pregnant women. AmniSure detects the PAMG-1 protein marker of the amniotic fluid. The test is marketed for use by health care professionals to aid in the detection of ROM in pregnant women when patients report signs, symptoms, or complaints suggestive of ROM.[2]

ROM Plus® Fetal Membranes Rupture Test

The ROM Plus Test (Clinical Innovations, LLC) is also proposed as a rapid *in vitro* diagnostic test for the detection of alpha-fetoprotein (AFP) and placental protein 12 (PP12 or insulin growth factor binding protein; proteins found in amniotic fluid), to aid in the diagnosis of PROM in pregnant women.[3]

Regulatory Status

Both the AmniSure and ROM Plus tests have received 510(k) clearance from the U.S. Food and Drug Administration (FDA).

MEDICAL POLICY CRITERIA

Placental rapid immunoassays, including but not limited to the AmniSure® ROM and ROM Plus® tests, for the diagnosis of premature rupture of membranes, are considered **investigational**.

SCIENTIFIC EVIDENCE

Validation of any new diagnostic technique involves three steps:

- Demonstration of its technical feasibility, including assessment of its reproducibility and precision. For comparison among studies, a common standardized protocol is necessary.
- An understanding of normal and abnormal values as studied in different clinical situations. For accurate interpretation of study results, sensitivities, specificities, and positive and negative predictive values compared to a gold standard must be known.
- The clinical utility of a diagnostic technique is related to how the results of that study can be used to benefit patient management. The clinical utility of both positive and negative tests must be assessed. Relevant outcomes of a negative test (i.e., suspected pathology is not present) may be avoidance of more invasive diagnostic tests or avoidance of ineffective therapy. Relevant outcomes of a positive test (i.e., suspected outcome is present) may also include avoidance of a more invasive test plus the institution of specific, effective therapy.

AmniSure ROM Test

A limited number of studies have been published on the AmniSure test.[4-11] In addition, a majority of those studies did not examine the clinical utility of the test - they did not compare health outcomes in patients where treatment decisions were based on AmniSure alone vs. treatment decisions based on standard testing.

One published study described the influence of the Amnisure test on clinical management decisions in women with a history of PROM.[12] The findings from this study are considered unreliable due to the following:

- The study design was observational and lacked an adequate comparison group.
- Physicians reported their levels of confidence in their diagnosis before and after the Amnisure test and whether the test results led to a change of intended management plan; however, the study failed to report how the treatment plans changed and whether those changes led to significantly improved health outcomes (eg, prolonged pregnancy, decreased fetal morbidity and mortality).

ROM Plus Test

The published evidence on the ROM Plus test is limited to a 2013 study of the feasibility and diagnostic accuracy of the ROM Plus test compared with conventional diagnostic techniques.[13] No publications specific to the clinical utility of the ROM Plus Test were identified in the scientific literature.

Clinical Practice Guidelines

Currently, no published evidence-based clinical practice guideline recommends either the AmniSure ROM or the ROM Plus Test for the detection of ruptured fetal membranes:

- The 2011 Institute for Clinical Systems Improvement (ICSI) clinical practice guideline on management of labor lists AmniSure as an option for detection of amniotic fluid. However, the ICSI guideline is not evidence-based and does not include a critical appraisal of the current literature on the topic.[14]
- The 2009 evidence-based U.S. Department of Veteran Affairs, Veterans Health Administration, Veterans Health Administration (VA / DoD) clinical practice guideline on management of pregnancy is silent on the use of either the AmniSure or ROM Plus tests.[15]
- The American College of Obstetricians and Gynecologists (ACOG) is silent on the use of AmniSure and ROM Plus tests.[16]

Summary

The published evidence on the AmniSure ROM and ROM Plus tests is limited to a small number of trials that studied test performance and accuracy. However, there are currently no studies that report whether the use of this testing in patient management results in improved health outcomes.. Because there is lack of reliable evidence that use of either test leads to significantly improved health outcomes, placental rapid immunoassays, including the AmniSure ROM and ROM Plus test, are considered investigational.

REFERENCES

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CROSS REFERENCES

None

CODES	NUMBER	DESCRIPTION
CPT	84112	Evaluation of cervicovaginal fluid for specific amniotic fluid protein(s) (eg, placental alpha microglobulin-1 [PAMG-1], placental protein 12 [PP12], alpha-fetoprotein), qualitative, each specimen
HCPCS	None	