



AMNIOTIC FLUID EMBOLISM

CLINICAL FACT SHEET

KEY POINTS

- **SUSPECT AFE WITH CLASSIC TRIAD:**
HYPOXIA, HYPOTENSION, AND COAGULOPATHY AT OR WITHIN 30 MINUTES OF BIRTH
- **TREATMENT IS AGGRESSIVE AND SUPPORTIVE**
- **AFE IS A DIAGNOSIS OF EXCLUSION AND OFTEN MISUNDERSTOOD**

WHAT IS AFE?

Amniotic fluid embolism (AFE) is characterized by acute and rapid collapse of the mother around the time of birth as a result of an anaphylactic-like reaction to amniotic fluid in the maternal circulation. Although rare, it is often fatal and remains a leading cause of maternal morbidity and mortality in the United States.

INCIDENCE

The true incidence of AFE is unknown but is estimated at 1 in 40,000 births, with a mortality rate ranging from 20-40%.

RISK FACTORS

AFE remains an unpredictable and therefore unpreventable event. Data regarding risk factors for AFE are inconsistent and contradictory. As a result, changes to obstetric practice to reduce the risk of AFE are not recommended.

PATHOPHYSIOLOGY

AFE appears to result from an abnormal maternal response to amniotic fluid entering the mother's bloodstream during labor and birth. Entry of fetal cells and amniotic fluid into the blood stream is a normal occurrence. However, some mothers mount a massive, abnormal immune response similar to anaphylaxis.

CLINICAL PRESENTATION AND DIAGNOSIS

AFE is a clinical diagnosis. The diagnostic criteria for AFE includes:

1. Sudden onset of cardiopulmonary arrest, or both hypotension with respiratory compromise
2. Documentation of overt DIC following appearance of initial signs and symptoms
3. Clinical onset during labor or within 30 minutes of placenta delivery
4. No fever during labor

In atypical cases, one or more of these signs may be absent. Careful exclusion of other conditions are essential.

The identification of fetal squamous cells in the maternal circulation occurs routinely and is not diagnostic of AFE. In addition to the classic triad, other signs and symptoms have been described including increased anxiety, agitation, impending sense of doom, confusion, and nausea. Fetal heart rate abnormalities often precede maternal cardiovascular collapse.

MANAGEMENT

Treatment of AFE is aggressive and supportive. If the patient is in cardiac arrest, the first step is to provide high quality cardiopulmonary resuscitation. If undelivered, manual left uterine displacement is recommended with plans to proceed with resuscitative cesarean section after 4-5 minutes if spontaneous circulation has not returned. Respiratory support should be provided with anticipation of need for intubation and mechanical ventilation. Coagulopathy occurs even without immediate evidence of hemorrhage and requires anticipation, aggressive, and rapid correction with blood products.

RECURRENCE

Recurrence risk is not known due to the rarity of the condition, limited data, and inaccurate diagnosis. However, many cases of successful pregnancies following AFE have been reported.

CURRENT RESEARCH

Clinicians are encouraged to assist in the enrollment of cases into the Amniotic Fluid Embolism Registry, a research database and biorepository. Immediate cases (< 7 days) may be eligible for specimen research.

Find more information at AMNIOTICFLUIDEMBOLISM.ORG

FURTHER READING

Checklist for initial management of amniotic fluid embolism.

American Journal of Obstetrics & Gynecology, 2021

Amniotic fluid embolism: principles of early clinical management.

American Journal of Obstetrics & Gynecology, 2019

Proposed Diagnostic criteria for the case definition of amniotic fluid embolism in research studies.

American Journal of Obstetrics & Gynecology, 2016

Evaluation of proposed criteria for research reporting of amniotic fluid embolism.

American Journal of Obstetrics & Gynecology, 2019

Reproductive decisions after the diagnosis of amniotic fluid embolism.

European Journal of Obstetrics & Gynecology, 2017