



Official reprint from UpToDate®

www.uptodate.com © 2024 UpToDate, Inc. and/or its affiliates. All Rights Reserved.

Wolters Kluwer

Initial emergency management of suspected amniotic fluid embolism (AFE)

Begin basic and advanced cardiac life support maneuvers	Manual chest percussions, emergency airway management with 100% oxygen and intubation, and the establishment of intravenous (IV) access. Pregnancy-specific issues include manual uterine displacement to avoid aortocaval compression, intravenous access above the diaphragm, avoidance of alkalosis, lower than usual ventilation volumes, high fractions of inspired oxygen. ECMO may be considered for refractory hypoxemia during CPR.
Provide hemodynamic support	- Rapid administration of crystalloid (eg, normal saline or lactated Ringer's solution) for non-hemorrhagic shock or blood for hemorrhagic shock. The response should be acutely followed by the assessment of vital signs, and bedside ultrasound monitoring of the inferior cava, if available. Discontinue fluids when intravascular volume has been replenished or pulmonary edema becomes apparent. - Administer vasopressor therapy for refractory shock. Norepinephrine is typically first choice. Consider addition of dobutamine or other inotrope for cardiogenic shock. Alternatives are epinephrine (preferred in anaphylaxis), ephedrine (post anesthesia hypotension), or phenylephrine (if tachyarrhythmia is an issue). Many experts avoid vasopressin (increased uterine contractions) and dopamine (possible increase risk in death in sepsis patients).
Management of hemorrhage and coagulopathy*	- Prolonged PT, aPTT, fibrinogen <100 mg/dL → FFP and cryoprecipitate → Goal is normalization of INR and fibrinogen >100 mg/dL. - Platelet count <50,000/microL-one to two units of random donor platelets per 10 kg of body weight. - Consider other agents for cases refractory to standard DIC treatment measures.[¶]
Delivery of fetus	- Determine uterine size and estimate gestational age. Delivery is considered in most cases for pregnancies ≥20 weeks of gestation/uterine size at or above the umbilicus to relieve aortocaval compression and facilitate return of spontaneous circulation, regardless of fetal status (alive or demised). - Consider cesarean delivery if spontaneous circulation has not returned within 4 minutes of maternal cardiorespiratory collapse and delivery of

	the fetus should be completed within 5 minutes (known as the "4-minute rule" or "the 5-minute rule").^Δ ▪ Perimortem operative vaginal delivery with forceps or vacuum is appropriate if it can be achieved within this timeframe. ▪ Delivery is preferably at the location of the arrest (often not an operating room). ▪ Manage postdelivery uterine bleeding with standard methods (eg, uterotonic drugs, balloon tamponade or packing, hemostatic sutures)
Preliminary testing	▪ Complete blood count, chemistries including metabolic profile, PT, aPTT, INR, troponin, brain natriuretic peptide, type and screen, complement 3 and 4, serum tryptase and histamine. Arterial blood gas, chest radiograph, electrocardiography, bedside ultrasonography (if available; this may include thoracic, cardiac, abdominal, and/or lower extremity ultrasonography).

A multidisciplinary, team-based approach involving critical care, maternal-fetal medicine, respiratory care, nursing, and anesthesia specialists is preferred to increase the chances of stabilization and avoid further deterioration. In general, initial resuscitative efforts are simultaneous with diagnostic evaluation in an attempt to elucidate the etiology of cardiorespiratory compromise.

ECMO: extracorporeal membrane oxygenation; CPR: cardiopulmonary resuscitation; PT: prothrombin time; aPTT: activated partial thromboplastin time; FFP: fresh frozen plasma; INR: international normalized ratio; DIC: disseminated intravascular coagulation.

* Applies mostly to patients with active bleeding. However, in the absence of bleeding, treatment may be justified if the risk of bleeding is considered high (eg, surgery is anticipated). In addition, consider activating obstetric massive transfusion protocol, if available.

¶ Case reports suggest success with lyophilized concentrated fibrinogen (eg, RIAstat). C1 esterase inhibitor concentrate, fibrinolytic agents such as aprotinin, aminocaproic acid, and tranexamic acid^[1] and a combination of atropine, ondansetron, and ketorolac (A-OK) are investigational but have been used successfully in case reports only. Factor VIIa use in patients with AFE should be reserved as a last resort and only for those with hemorrhage refractory to medical and/or surgical intervention.

Δ Pragmatically, this time frame is difficult to achieve.

Reference:

1. Patient Safety and Quality Committee, Society for Maternal-Fetal Medicine, Combs CA, Montgomery DM, et al. Society for Maternal-Fetal Medicine Special Statement: Checklist for initial management of amniotic fluid embolism. *Am J Obstet Gynecol* 2021; 224:B29.