SPECIAL ISSUE FOR CURRENT PHARMACEUTICAL BIOTECHNOLOGY

AMNIOTIC FLUID EMBOLISM: NOVEL BIOMARKERS FOR FUTURE DIAGNOSTIC INVESTIGATION AND THERAPY

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Aims & Scope:
Amniotic fluid embolism (AFE) is a rare and severe obstetric emergency with an incidence ranging roughly from 1/600 to 1/120,000, but the best estimate of 1/20,000 pregnancies comes from a population based study using hospital discharge diagnoses. Traditionally thought to be 90% fatal, with maternal survival casting doubt upon the diagnosis, the population-based study found a mortality rate of 26%. The reported case fatality rate is between 22 and 86%. Although its pathophysiology remains unclear, it has been postulated that amniotic fluid and fetal debris enter the maternal circulation causing pulmonary embolism and cardiorespiratory collapse. At present, AFE is widely deemed not preventable as risk factors have not been consistently observed. It has been suggested that until a definitive diagnostic test is discovered a set clinical standard might be developed with a set of weighted clinical and epidemiological criteria, and by validation of a numerical score to indicate presence of disease. Amniotic fluid contains various concentrations of fetal squamous epithelial cells, lanugo hair, vernix, mucin, zinc-coproporphyrin, prostaglandins, and platelet activating factor. One possible mechanism of disease includes the effect of direct procoagulant substances found in amniotic fluid on maternal systems. The presence of vasoactive substances, such as platelet activating factor, in the placenta and amniotic fluid has been shown to cause increased vascular permeability, bronchoconstriction, platelet aggregation, recruitment of leukotrienes, cytokines, and thromboxanes, and the cascade of prostaglandin production. Review of all published data on the hemodynamics of the syndrome indicates early transient pulmonary hypertension. The use of endothelin antagonists or nitric oxide in experimental models may shed some light on the pathophysiology of the condition and lead to therapeutic manipulations of the condition. There is still no routine specific diagnostic scheme that can be used to diagnose AFE, but some tests may support diagnosis. The diagnosis of AFE is one of exclusion and mostly presumptive; it is made on the basis of the clinical presentation of a woman in labor or within 48hs of delivery. A validation of various proposed laboratory tests, allows the clinician and the pathologist to obtain a more reliable diagnosis of AFE, confirming that the term amniotic fluid embolism appears to be a misnomer and should be discarded and the syndrome of acute peripartum hypoxia, hemodynamic collapse and coagulopathy should be hereafter described as anaphylactic or anaphylactoid pregnancy syndrome.

Approximate Schedule:
Manuscript Submission Deadline: 11/30/2013
Peer Review Due: 1/10/2014
Revision Due: 03/10/2014
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Final Manuscripts Due: 04/30/2014