Fetal loss following second trimester amniocentesis. Who is at greater risk?

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Objective
The purpose of this retrospective study was to determine the impact of certain maternal risk factors on fetal loss, after mid-trimester amniocentesis and to evaluate the relative risk for adverse outcome, in the presence of these predisposing factors.

Methods
Data were retrieved from the Prenatal Diagnosis Unit, of the 1st Department of Obstetrics & Gynaecology, of the University of Athens, Greece, during a 7-year period (2004-2010) with known pregnancy outcome. It comprises 6572 consecutive amniocentesis performed during this period. Advanced maternal age, vaginal spotting and/or bleeding during pregnancy, previous history of first or second trimester abortions, fibroids, placental location and blood-stained amniotic fluid, were risk factors evaluated in this study. Previous abortions and severe bleeding during the current pregnancy were also evaluated. To test the effect of the factors under investigation on fetal loss, univariate logistic regression analysis was used and data were modeled using backward stepwise logistic regression analysis with variable removal set. 

Results
The leading indication for amniocentesis in our institution was maternal age. Total fetal loss rate up before 24th weeks of gestation was 1.19%. Factors associated with increased risk of fetal loss after amniocentesis were maternal age (OR: 2.0), spotting (OR: 2.2) and severe bleeding (OR: 3.5) during pregnancy, history of 2nd trimester termination of pregnancy (OR: 4.0), history of more than 3 spontaneous (OR: 3.0) or surgical first trimester abortions (OR: 2.1), fibroids (OR: 3.0) and stained amniotic fluid (OR: 6.1).

Conclusion
Amniocentesis is a safe invasive procedure for prenatal diagnosis with total fetal loss rate of 1.19% in our institution. It is known that miscarriage does not occur only in association with amniocentesis but different maternal and pregnancy conditions, may be also responsible. The present study has emphasised the significance of certain risk factors for adverse outcome and therefore the need to individualise the risk in terms of OR's, in prenatal counselling.