The increase of glucose levels in maternal blood during pregnancy has been experimentally linked to an increased Pulsatility Index (PI) of fetal Middle Cerebral Artery (MCA). The PI indicates the trend of the velocity curve during the cardiac cycle. Maternal blood glucose levels are subject to important interindividual variations after 75g Oral Glucose-Tolerance Test (OGTT), and their performance are associated with a significant changes in various indices of high-risk pregnancy, such as umbilical cord concentration of bilirubin.

Our study is divided into three phases:
1. Second trimester of pregnancy: illustration of the study to selected patient and delivery of informed consent;
2. Third trimester of gestation: ultrasound evaluation of PI before and after OGTT, maternal blood glucose measurement using the appropriate stick;
3. Childbirth: collection of maternal and neonatal parameters such as type of delivery and blood levels of bilirubin in umbilical cord.

The aim of our study is to confirm, with clinical evidences, correlation between increased PI of MCA with fetal levels of bilirubin, contemplate a possible connection of those values with the number of caesarean and preterm deliveries.

We consider a pregnant who eats irregularly: prolonged hyperglycemia during pregnancy can cause sustained elevation PI of MCA and fetal hypoxemic damage so that, at the time of delivery, it can result in fetal distress.

Therefore, in future, the increase of the PI of MCA, related to the outcome of the OGTT, could be a marker of high-risk pregnancy.