DESCRIPTION FOR THE GENERAL PUBLIC

The failures of pregnancy are becoming more frequent phenomenon affecting all ethnic groups and are often the result of many interconnected processes. Spontaneous abortion is a big experience for the family. There are a lots of questions, what was the cause of miscarriage, or could we save the life of the developing child and whether there is an increased risk of subsequent pregnancy loss. The failure of pregnancy is also a serious diagnostic and therapeutic problem for a woman who has experienced pregnancy loss. Precise estimates of the scale of the problem of failure of pregnancy pose a big problem, because the statistics on failures of pregnancy come mainly from the health unit and do not take into consideration miscarriages that occur outside the hospital, eg. at home (PTG, 2008). It is estimated that 8-20% of pregnancies fails (Bug et al., 2014), and 1-2% of women experience recurrent miscarriages, it means least three consecutive abortions that occur before the 20th week (Exalto et al., 2007).

The failure of pregnancy is divided into a spontaneous abortions and stillbirths. Abortive is a fetal loss of 500 g or less (up to 20 weeks of gestation) according to WHO criteria. Loss of pregnancy over 20 weeks is defined as childbirth dead. There are many reasons for the failure of pregnancy including environmental factors, anatomical defects of the uterus, endocrine disorders, metabolic but the most important is the presence of chromosomal aberrations in the embryo/fetus.

DNA microarray is a glass plate-like microscope slide with marked DNA fragments covering the most important regions of the human genome. DNA fragments are molecular probes designed to recognize a change in the genetic material. Comparative analysis of patient DNA with DNA of healthy individuals allows identification of the number of copies of DNA fragments, deletion or duplication in the genome of the patient. The result is represented in the form of report containing chromosomal regions or genes in a patient which are too much or too little. Microarrays (aCGH) compared to previously used methods such as karyotype, allow in a single experiment analysis of the entire genetic material with the resolution not achievable in other diagnostic methods. The resolution of this method depends on the type of used matrix. This method does not detect balanced translocations and inversions and mosaicism. All correct results obtained by aCGH will be verified using Rapid-FISH to exclude the presence of multiple numbers of all chromosomes. The main objective of the proposed project will be to determine the role of submicroscopic chromosomal rearrangements, detectable using aCGH in the etiology of recurrent miscarriages. The study will cover 60 patients who developed recurrent pregnancy loss between 8 and 20 weeks and there were observed abnormalities on ultrasound (if it was made).