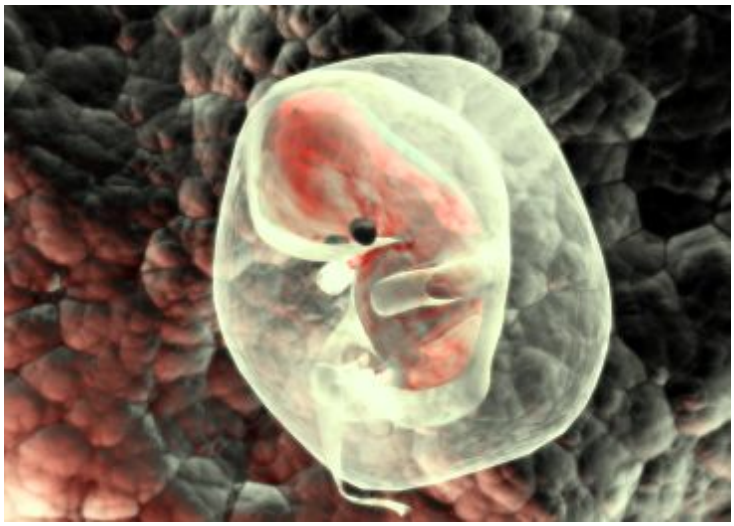
BioSpectrum the business of Bio & Health Sciences

Chances of having a healthy baby improves with new genetic screening

12 September 2013 | News | By BioSpectrum Bureau

Chances of having a healthy baby improves with new genetic screening



Couples facing infertility problems could now improve their chances of having a healthy baby with new genetic screening and diagnostic services. These not only promise to increase their chances of a successful parenthood, but also reduce the number of IVF cycles that they might otherwise need to be subjected. The first of its kind, Iviomics lab, offers international technology for a safer, faster and more accurate method of identification and selection of healthy, disease-free embryos.

According to the research performed by Iviomics, almost 80% of the embryos turn out to have chromosomal abnormalities in pregnancies occurring in women above 35 years who are undergoing infertility treatment. FISH (Fluorescent In-situ Hybridization) has been the choice of technique used for the screening of the same. However this technique can analyze only a selected number of chromosomes (9-12 out of total 24). The newly introduced genetic screening technique called array CGH (Comparative Genomic Hybridization) can screen all the 24 chromosomes and hence increase the ongoing pregnancy rate in all the groups of patients with problems like advanced maternal age (women getting pregnant at 35 years or above), recurrent miscarriage (more than or equal to 3 pregnancies that end in miscarriage) etc.

Iviomics India Lab Manager, Dr Pere says "In couples with recurrent miscarriages, 80% of the embryos are chromosomally abnormal and up to 15% patients have all the embryos which are chromosomally abnormal. These couples therefore would never have a chance of conceiving a healthy offspring. Previously, the IVF clinics had no choice but to repeat the IVF cycles till there was a success or otherwise. Now, after Array CGH analysis only those embryos which are chromosomally normal are transferred to the uterus which increases the success rate of pregnancy and implantation. This simultaneously reduces the risk of miscarriages or having a live born child with chromosomal abnormality like Down's syndrome."

"Additionally, the lab also provides PGD services (Preimplantational Genetic Diagnosis) which can help couples with a personal or family history of genetically inherited disorders to have healthy babies. Iviomics has a developed a PGD protocol for more than 150 single gene disorders," added Dr. Pere.

Another service called ERA (Endometrial Receptivity Array) helps the IVF clinicians to find out the most suitable time for the transfer of embryo in the uterus. Endometrium is the inner lining of a uterus which is made up of a dynamic tissue that helps embryo to get implanted in the uterus. In this way, chances of any loss of a good quality embryo are reduced. Histological markers have been outweighed by the molecular diagnostic tool patented by Iviomics, because of the accuracy and reproducibility of the latter. This service helps to identify the personalized window of implantation (the period with highest receptivity of endometrium for an embryo) in patients who are facing repeated implantation failures (more than or equal to 3) in spite of having a good quality embryo.

The lab also offers NACE (Non Invasive Analysis for Chromosomal Examination), which has a 99.9% detection rate for Down's syndrome Patau's and Edward's syndrome which is achieved by using an advanced technology called Massive Parallel Sequencing. This is a non-invasive alternative to invasive procedures like amniocentesis in which there are fair chances of fetal loss. (In amniocentesis, a needle is inserted inside the uterus to withdraw amniotic fluid for examination of amniotic cells)This is performed on the cell free fetal DNA which is extracted from the mothers blood via simple blood draw, hence posing zero risk to the baby. It is done in the 12th week of pregnancy, hence giving enough time for the couple to be counseled accordingly.