Le screening génétique préimplantatoire (PGS): intérêt et résultats

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Aneuploidies are common in early human embryos. Trisomic and monosomic embryos account for at least 10% of human pregnancies and, for women nearing the end of their reproductive lifespan, that incidence may exceed 50%. Age-related defects result in higher aneuploidy rates in the offspring, and an increase in spontaneous abortions, thereby reducing ongoing implantation rates. Aneuploidy may also be a contributing factor in other infertile populations. In couples suffering from recurrent miscarriages, despite other potential causes, an abnormal embryonic karyotype has been found to represent the most frequent cause. While a diagnosis of repetitive implantation failure remains a challenge to the clinician—its causes can be multiple and not well-defined and factors from the embryo as well as from the endometrium or its environment may contribute—among embryonic causes, embryonic aneuploidy has been proposed. In male infertility, an increase in sperm chromosomal abnormalities due to impairment of the meiotic process has been described. Additionally, a higher incidence of abnormal karyotypes has been described in the miscarriages of couples undergoing ICSI because of male infertility.

The assessment of embryo aneuploidy at preimplantation stage has been extensively applied to improve pregnancy rates. There is a clear need for a comprehensive chromosome screening (CCS), while also producing reliable and faithful results in a short period of time. In our program, firstly, we validated an array CGH platform in single blastomeres, subsequently we have been applying this technology in the last three years in cleavage stage and blastocysts biopsies. Our current experience will be presented for different clinical indications and considering oocyte and embryo

vitrification as a co-adyuvant to improve reproductive outcomes in IVF patients.

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