DOES PGS HAVE A ROLE? PROS AND CONS

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Preimplantation Genetic Screening (PGS) is offered in many IVF centres to improve the reproductive outcome of specific groups of patients. Current indications for PGS are: advanced maternal age (AMA), recurrent miscarriage (RM), repetitive implantation failure (RIF), and severe male factor infertility (SMF). In PGS programs, the technique most widely employed for the cytogenetic analysis of blastomeres has been fluorescence *in situ* hybridization (FISH) for a selected panel of chromosomes. The chromosomes most commonly tested are: 13, 15, 16, 17, 18, 21, 22, X and Y, allowing the detection of 85% of embryo aneuploidies. Using FISH protocols, an improvement in implantation and pregnancy rates has been described in retrospective studies in AMA, SMF and RM patients, whereas their benefit in RIF couples has been more controversial. More recently, prospective randomized trials (RCT) concluded that PGS should not be recommended in AMA patients. Other authors have argued that there are some important methodological pitfalls in the published RCTs, such us patients´ inclusion criteria, the embryo biopsy procedure, embryo culture conductions as well as the type of genetic analysis performed. It has been proposed that higher benefits would be reached if the whole set of chromosomes could be tested. CGH is the option closer to karyotyping, and although it has been applied to clinical practice, it needs to reduce the time required for the analysis. Nowadays, the best approach towards aneuploidy screening would be array-CGH, which would offer the most complete analysis of the embryo, giving information about all 24 chromosomes and extra information that can be customized. Future developments for aneuploidy screening in preimplantation embryos would be focussed on polar body biopsy and trophectoderm biopsy using arrays analysis for 24-chromosome analysis. In this presentation, we will critically analyze our clinical results, obtained by sequential FISH for chromosomes 13, 15, 16, 18, 21, 22, X, and Y. And we will present preliminary data with aCGH analysis.