The ratio of aneuploidy in accordance with the preimplantation embryonic gender in IVF+PGS cycles

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Introduction. As we know, among newborns with chromosomal abnormalities there are variations in accordance to their gender in the population, which could as well be observed in the preimplantation embryos.

Material and Methods. 3043 embryos were analyzed from 279 IVF+PGS cycles at the cleavage stage. The investigation was made on a single blastomere, FISH was carried out on chromosomes 13, 16, 18, 21, 22, XY.

Results. 1566 of **3043 (51,5%) embryos were aneuploid with** errors involving a single **investigated autosome, 782 of them were female and 784 were male embryos. After analysis it was found that the non-disjunction in chromosome 21 occurred more frequently in female embryos, higher** frequency of **aneuploidy in chromosome 22 were detected in male embryos** (23,60% vs.18,67%,χ^2=5,701,p0,025). Monosomies were discovered more often in male than in female embryos with statistically significant difference (56.38% vs.48,08%,χ^2=10,799,p0,005). In the analysis of nullisomies (12.92% vs.8,93%,χ^2=6,398,p0,01) and tetrasomies (5.88% vs.2,93%,χ^2=8,082,p0,005) defined a shift towards the female embryos. Trisomies were encountered with equal frequency in both sexes on investigated autosomes, but in chromosome 13 it occurred more often in the male embryos (51,30% vs.29,59%,χ^2=19,03,p0,001), although the gender difference among newborns were not found and complies as 1M:1F. The third day embryos with trisomy 18 had sex ratio as 1:1, but among newborns this ratio is 1M:3F.

Conclusion. There exists some association between chromosomal aneuploidy and the difference in viability depending on the sex of the embryo, some combinations of chromosomal set do not allow the embryo to reach the blastocyst stage.