Correlation between ploidy status and morphology grading

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ABSTRACT

Introduction: Morphology grading is the standard assessment by embryologist while ploidy status requires PGT-A technology.This study aimed determine if day 5 and 6 blastocyst morphology grading correlate with ploidy status in women. **Materials and Methods:** A retrospective study that compiled morphology and ploidy status from day 5 and 6 blastocysts created from 233 women in an internationally accredited fertility centre was conducted over a 3-year period. All blastocysts were cultured in vitro to day 5 or 6 of development. When stage appropriate, trophectoderm biopsy was performed and sent to our PGS/PGD laboratory. The inner cell mass (ICM) and trophectoderm cells of each embryo were graded according to Gardner's grading scale. A senior embryologist assessed to lessen subjectivity and grading of blastocysts was done. **Results:** Majority of patient were Chinese and between the ages of 35 to 39 years. The euploid embryos comparing with morphological grades were categorised according to the age group. Percentage of euploid embryos was 57.7% when age group was less than 35 years, 38.1% among 35 to 39, 19.6% among 40 to 44 years of age. Chi-Square test was significant in showing the difference between the age groups and there was a positive correlation with age (Cremer V value was 0.250). **Conclusion:** There is a positive correlation between morphology and euploid status. Furthermore, as expected younger patients had significantly more euploid embryos.