

# CYTOPLASM REPLACEMENT VIA PRONUCLEAR TRANSFER DOES NOT INCREASE EUPLOIDY RATES IN PATIENTS OF ADVANCED MATERNAL AGE

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## **Abstract Body**

Cytoplasm replacement procedure in human embryos is considered as highly controversial. Still, it could be the only option for having healthy genetically related children for narrow group of patients.

It's well known that patients of advanced maternal age possess impaired blastulation rates and highly reduced euploidy rates among biopsied embryos, even if those embryos had good morphology.

Nevertheless, some patients of advanced maternal age want to use the advantages of cytoplasm replacement, being unaware that such procedure could not prevent nondisjunction of chromosomes, because pronuclear stage occurs far after two consequential meiosis divisions. Besides, the number of errors occurring during the subsequent cleavage of an embryo is so small that could be neglected.

In this retrospective non-randomized study 11 patients above 35 years had participated. Mean age was 42 years. Inclusion criteria were: two or more previous failed IVF cycles (that are not associated with uterus or tubal factors of infertility), three or more zygotes per cycle (1PN and 3PN included), the absence of male factor of infertility.

Overall, 58 zygotes were reconstituted, 19 of them became blastocysts suitable for trophoctoderm biopsy in order to provide an aCGH analysis. Only 1 of 19 biopsied embryos was euploid and has not resulted in pregnancy after embryo transfer procedure.

Interestingly, that reversely reconstituted embryos (donor and husband nuclei and patient's cytoplasm) have shown normal euploidy rates (8 of 11 biopsied embryos), so "aged" cytoplasm itself could provide the complete embryo development, but further prospective investigations of nuclear-cytoplasmic relations are needed.

Thus, pronuclear transfer procedure is not recommended for patients of advanced maternal age, whose infertility is caused, mostly, by abnormal chromosomal distribution during meiosis.