L'IMPACT DE LA QUALITÉ DU SPERME SUR LES TRAITEMENTS DE FIV AVEC DON D'OVOCYTES: ÉVALUATION TIME-LAPSE EMBRYOSCOPE® DU DÉVELOPPEMENT EMBRYONNAIRE ET TAUX DE GROSSESSE.

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Centro Internacional de Fertilidad

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Objective

Our aim was to determine whether sperm quality has an impact on embryo development under time-lapse assessment technology and if it affects pregnancy rates in egg donation treatments.

Material and Methods

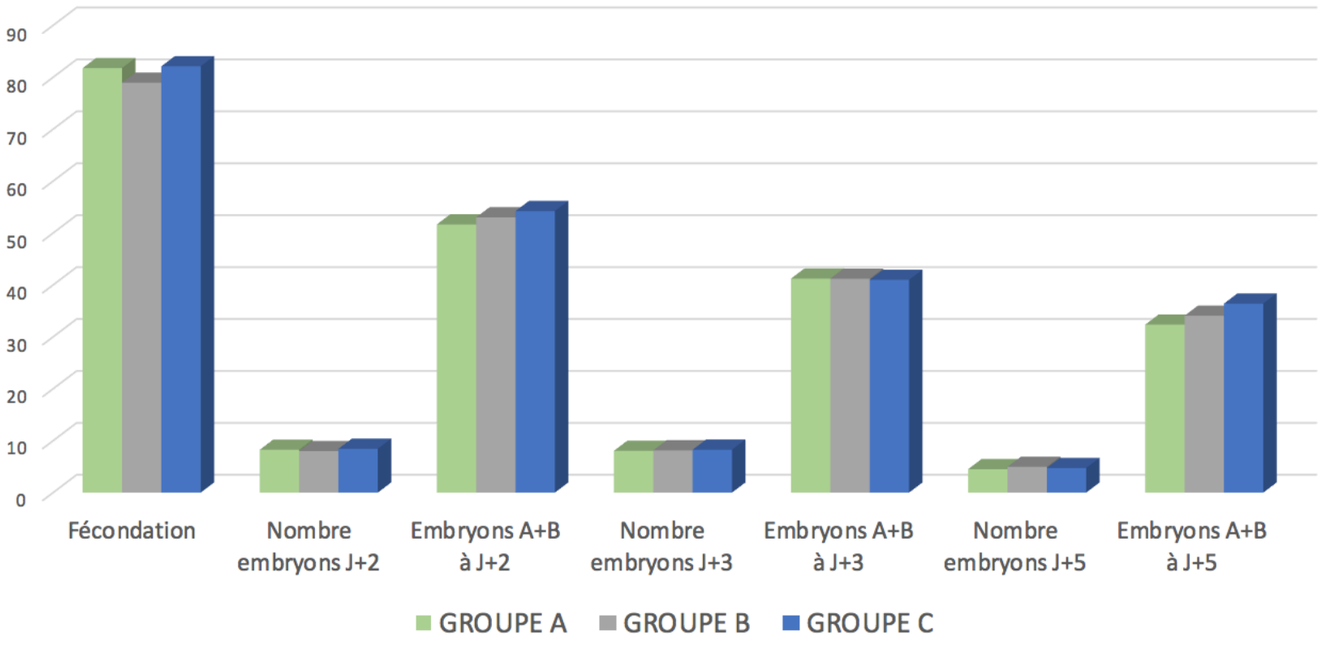
We performed a retrospective study in 219 couples treated in our center, ProcreaTec Fertility Clinic in Madrid, from 1 January 2015 to 31 July 2016.

All patients had undergone an egg donor ICSI treatment with fresh partner sperm. Time-lapse technology (Embryoscope®) was used to assess embryo quality following ASEBIR criteria.

Cases were separated in 4 groups depending on sperm quality: normozoospermia (group A: 99), asthenozoospermia (group B:29) and teratozoospermia (group C:80).

We didn't find any difference among groups in terms of donor age (mean:23,3), donor BMI (mean:22,3), % of non-smoker donors (mean:64,2), number of previous cycles of the donor (mean:3,0), male partner age (mean:43,1), male partner BMI (mean:25,3) or % of non-smoker partners (mean: 85,1).

We compared fertilization rates, good-quality (A+B) embryo-rate in the second, third and fifth incubation day and good-quality (A+B) embryos-to-transfer-rate. We also compared the total number of embryos for every stage of development among groups.



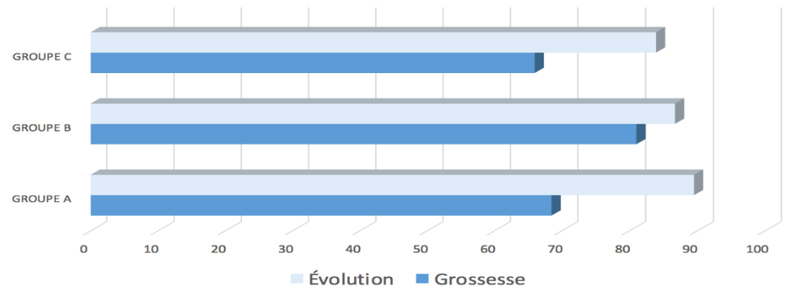
All donors were stimulated with a conventional GnRH antagonist protocol and FSHr until 3 or more follicles reached 17 mm. Ovulation was triggered with GnRH analogues and egg retrieval took place 34 to 36 hours after the trigger injection. Fertilization was carried out by ICSI in all cycles included, and a fresh sperm sample from the male partner was used in all cases.

The association of semen parameters (volume, concentration, percentage of motile spermatozoa) with embryo quality was analyzed by multiple analysis of covariance. The association of semen parameters with reproductive outcomes (biochemical pregnancy, miscarriage, ongoing pregnancy and live birth rate) was modeled by logistic regression, where the following covariates were introduced: donor age, recipient age, semen state (fresh versus frozen) and number of transferred embryos (3 and 2 versus 1)., excluding patiens with BMI >30 kg/m2 and/or endometrial thickness <7mm.

Results

No differences were found in reproductive outcomes (biochemical pregnancy, miscarriage, clinical pregnancy, ongoing pregnancy and live birth) among different sperm quality groups.

Similar number and quality of embryos were detected among groups.



Conclusions

We haven't been able to find a difference neither in embryo quality nor in the final outcome for the patients that undergo a treatment with egg donation and partner sperm, regardless the differences in sperm quality.

It is known that male factor alone is a cause for couple infertility in up to a 35% of the cases and a combined cause (with female factor) in up to a 30%. The presence of poor sperm quality may lead us to think of worse reproductive outcomes. Nevertheless, ICSI techniques associated with high quality embryo culture and the use of donor oocytes may help to diminish this negative effect.

The use of donor eggs limits the generalization of our results to all infertile couples, where the female partner may be older and may have other pathologies that affect egg quality, such us endometriosis or premature ovarian failure. ICSI was performed in all cycles to control fertilization but we know that this technique could mask the natural fertilization rate of poorer sperm samples.

Our study claims that sperm quality does not affect reproductive outcomes when the oocyte donor is <30 years of age, indicating that ICSI technique and time-lapse embryo culture can jointly overcome the lower reproductive potential of poorer sperm.

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