

## **PRONUCLEAR ZYGOTE POSITION AND EMBRYO CHROMOSOMAL COMPLEMENT**

**J. Teruel Lopez**<sup>1</sup>, J.P. Jimenez Ibañez<sup>1</sup>, M.S. Martin Salat<sup>1</sup>, M. Florensa Bargallo<sup>1</sup>, J. Molina Sabater<sup>1</sup>, S. Carmona Guede<sup>1</sup>, E. Bonilla Egea, C. Llop Lechuga<sup>1</sup>, A. Pellicer<sup>2</sup>, A. Ballesteros Boludea<sup>1</sup>, G. Calderon de Oya<sup>1</sup>

<sup>1</sup> *IVI Barcelona, Barcelona*

<sup>2</sup> *IVI Valencia, Valencia, Spain*

**Introduction:** Identifying the embryo with the highest implantation potential is one of the most challenging quests in the field of reproductive medicine. One proposal is based on the analysis of pronuclear zygotes in relation to the position of pronuclei.

The aim of the study was to verify if pronuclear location (central or peripheral) had an impact in embryo morphology, blastocyst formation and chromosomal status. We also analyzed pregnancy and implantation rates.

**Material and Methods:** The relationship between the pronuclear position, embryo development and chromosomal status, was evaluated in 40 couples that performed an IVF cycle with preimplantational genetic diagnostic (PGD) due to maternal advanced age or repeated implantation failures. The mean age of patients treated was 39.7 years of age. Between 16-20 hours after conventional insemination or ICSI, zygotes were classified according to their pronuclear location. Embryo morphology was checked daily until the day of the transfer. Blastocyst formation and chromosomal status of biopsied embryos were also taken into account. A retrospective analysis of all data obtained carried out.

The statistical analysis carried out to compare both groups was a X<sup>2</sup> test.

**Results:** 416 zygotes were analyzed in the study and 18.7% of them had peripheral pronuclei. We could not find any statistical significant difference between the chromosomal status of embryos derived from central or peripheral pronuclei (62.4% vs 62.8% chromosomally abnormal embryos). On the other hand, 58.4% of embryos derived from central pronuclei, developed in good quality embryos and blastocyst while only 42.3% of embryos coming from peripheral pronuclei form a blastocyst (p=0.007)

**Conclusions:** The position of pronuclei within the ooplasm was not predictive of the presence of complex chromosomal abnormalities in the embryos, but it was related to good embryo development and blastocyst formation.