

## **IMPROVED FERTILIZATION RATES AND SUCCESSFUL PREGNANCIES AFTER OOCYTE ACTIVATION BY A CALCIUM IONOPHORE**

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**Introduction:** Oocyte activation defects are involved in fertilization failure after intracytoplasmic sperm injection (ICSI). We studied fertilization and pregnancy rates achieved in Spain after performing Assisted Oocyte Activation (AOA) in ICSI with Calcium ionophore.

**Material & Methods:** AOA was performed in 12 couples, 7 of them had low fertilization rate, 3 total fertilization failures on previous ICSI cycles, and 2 globozoospermic patients.

After ovarian stimulation and oocyte retrieval, AOA was carried out by ICSI with Calcium ionophore followed by a Ca<sup>2+</sup> ionophore exposure.

Fertilization, pregnancy, and ongoing pregnancy rates were assessed. Embryos were transferred on day 3 in all cases except for a preimplantation genetic diagnosis situation transferred on day 5.

Fertilization rates before AOA application in patients with previous low fertilization rate were 31.25%, 37.5%, 41.7, 46.67%, 42.85%, 37.5% and 28.57%. Fertilization rates after AOA in this group were 62.5%, 77.7%, 70%, 78.57%, 30, 71%, 42.85% and 60% respectively. Application of AOA in the total fertilization failure situations results in acceptable fertilization rates (30%, 70% and 42.86%).

Six childbirths were achieved using the AOA. Two children were born in the low fertilization rate group, two in the total fertilization group, and another two babies in the globozoospermia group.

**Conclusions:** According to our results, AOA improves fertilization rates in most of the clinical situations and 6 pregnancies were achieved with 6 healthy childbirths up to date. Fertilization failure might be due to sperm and/or oocyte activation defects, which may be overcome using ICSI with calcium ionophore.

**Keywords:** Assisted oocyte activation, calcium ionophore, pregnancies