

Pregnancy outcomes in female patients with X chromosome mosaicism after the first IVF/ICSI treatment: A 6-year retrospective cohort study

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Abstract

Objective: The present study focused on the clinical pregnancy and cumulative live birth rate (CLBR) of female patients with X chromosome mosaicism (XM) after the first in-vitro-fertilization (IVF)/intracytoplasmic sperm injection (ICSI) treatment, and the possible impact of different mosaic subtypes. **Design:** Retrospective cohort study **Setting:** Single Center study **Population:** Infertility couples **Methods:** In total, 76 couples with XM female partners and normal male partners were included (2014–2019) as the X group, with another 76 couples with normal karyotype included as the control group. Subgroup X1 included 41 45,X/46,XX cases, Subgroup X2 included 22 47,XXX/46,XX cases, and Subgroup X3 included 12 45,X/47,XXX/46,XX cases. **Main Outcome Measures:** The ovarian stimulation, embryo results and pregnancy outcomes were analyzed. **Results:** The X group presented similar CLBR but required a higher total gonadotropin (Gn) dosage than the control group (1800 IU vs. 1612 IU). Following subgroup analysis, the number of follicles during oocyte retrieval and average number of fertilized oocytes was lower in subgroup X1 than in X3. The clinical pregnancy rate and CLBR were similar in all groups. **Conclusion:** Females with XM may present a similar CLBR until one year after oocyte retrieval, but may require a higher total Gn dosage. Females with 45,X cells may recover fewer follicles during oocyte retrieval, resulting in fewer embryos. A higher 45,X cell ratio (over 5%) may lead to a lower CLBR. **Funding:** This study was supported by the Ministry of Science and Technology of China (2016YFC1000602). **Keywords** X chromosome mosaicism, IVF/ICSI outcome, cumulative live birth rate

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