

Long term follow-up of 54 children born by IVM-IVF (In vitro maturation, in vitro fertilization and embryo transfer)

¹IVF Osaka Clinic, ²IVF Namba Clinic

¹Akiko Koike, ¹Aisaku Fukuda, ¹Kengo Sugihara, ¹Atsushi Haruki,

²Yoshiharu Morimoto

Introduction

The first successful pregnancy and childbirth from IVM-IVF of immature human oocyte was reported in 1991 (Cha *et al.* 1991). Thereafter, IVM-IVF procedure was successfully applied on the patient with polycystic ovarian syndrome (PCOS) as a clinical treatment in 1994 (Trousoun *et al.* 1994). Our clinic reported the first Japanese IVM-IVF pregnancy in 1999. Although IVM-IVF is not a main stream of ART, more than a few thousand babies have been born by this technology in the world. The objective of the present study was to determine if the technology of IVM-IVF influenced on the development of resulting children by assessment of long term following up to 7 years.

Materials & Methods

Clinical follow-up study at private setting fertility clinic. From September 1999 to December 2011, 941 OPUs (577 fresh ET and 363 FET cycles) and 549 ETs (340 fresh ET and 209 FET cycles) were performed. A total of 81 IVM-IVF children were born and all of them were subject to be assessed. We have sent questionnaire to 46 pregnant patients who achieved pregnancy by IVM-IVF and subsequently delivered babies. Physical development such as body weight and height as well as mental development were analyzed at six stages (at birth①, 12 months old②, 18 months old③, 3 years old④, 5 years old⑤, and 7 years old⑥).

Results

The questionnaires were sent to 46 patients and 43 responded about 54 children (37 fresh ETs and 17 FETs). The collection rate was 93.5% (43/46); fresh ET 96.7% (29/30) and FET 87.5% (14/16). Significant differences in weight and height was compared with fresh ET and FET was observed. The occurrence of congenital anomalies from IVM-IVF babies was 1.9% (1/54); fresh 2.7% (1/37) and FET 0.0% (0/17). The one congenital malformation is a Goldenhar syndrome and died at 1 year 11 months. One child from fresh ET has been diagnosed as Asperger syndrome later in his development. This child is 11 and half years old at present time. Eighty eight percent (48/54) of the patients accepted for survey of further investigation in the future.

Conclusions

Follow-up survey of the children born by IVM-IVF has been conducted, but the sample size is too small to conclude. The occurrence of malformation ($< 2\%$) from IVM-IVF seems to be identical to either other ART treatment or natural pregnancy so far. It is important to keep monitoring these children not only physically, but also mentally, because one child was diagnosed as Aspergar syndrome after 10 years old.