

P-27 Poor Sperm Quality Influences Clinical Pregnancy
Outcome in ICSI: Potential Paternal Effects
on Pregnancy Outcome

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Objectives: Repeated failures of assisted reproduction could be originated from paternal effects of poor sperm quality on fertilization, preimplantation embryo development, implantation and/or clinical pregnancy outcomes. However, since there are multiple factors influencing these events, it is still controversy whether sperm quality may significantly affect these events in intracytoplasmic sperm injection (ICSI) cycles. The aim of this retrospective study was to evaluate whether sperm quality influences sequential events from fertilization to delivery in ICSI cycles.

Methods: To more clearly evaluate potential paternal effects of poor sperm quality, we selected ICSI cycles with embryo transfer performed on day 3 and without other key factors influencing early embryo developments and clinical pregnancy outcomes, such as uterine factor, old age and poor hormone response of partner. Rates of fertilization, implantation, pregnancy and delivery, and sequential embryonic score (SES) were examined in 217 cycles from normal spermatogenesis group (NSP) - normal ejaculated and obstructive azoospermic patients (n=159) and defective spermatogenesis group (DSP) - severe oligoasthenoteratozoospermia (OATS) and non-obstructive azoospermic patients (n=58).

Results: Fertilization rate of DSP (68.2%) was significantly lower than that of DSP (80.4%) (p<0.001). While poor sperm quality led to lower fertilization rate, sum of SES, mean SES of transferred embryos, and top SES on day 3 were similar between NSP and DSP. However, pregnancy outcomes were significantly different between NSP and DSP. In NSP, rates of implantation, clinical pregnancy and delivery (23.5%, 50.9% and 45.3%) were significantly higher than those of DSP (15.5%, 32.8% and 29.3%), respectively (p<0.05). Additionally, we analyzed their subsequent frozen-thawed cycles in case patients failed to become pregnancy in the fresh cycle. Consistent with data of fresh cycles, frozen-thawed cycles showed poor outcomes in implantation, clinical pregnancy and delivery in DSP compared to those of NSP.

Conclusion: Collectively, this study has shown that poor sperm quality could contribute to detrimental effect for embryo implantation and pregnancy in ICSI-ET cycles. The reduced fertilization potential and lower clinical pregnancy outcome of DSP may be derived from early and late paternal effects of defective spermatogenesis in these patients.