The embryonic quality regarding KIDScore D5 is positively associated with perinatal outcomes in cycles of intracytoplasmic sperm injection.

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INTRODUCTION: Determining which aspects of assisted reproduction techniques pose higher risks of perinatal complications and how these risks can be minimized is crucial for delivering healthy babies. Therefore, the aim of this study was to investigate whether embryo quality assessed by KIDScore on day 5 of development is associated with perinatal outcomes in cycles of intracytoplasmic sperm injection (ICSI).

METHODS

Cohort study - private university–affiliated IVF center - Jan/2022 and May/23

264 patients undergoing frozen-thawed embryo transfer cycles following ICSI

n=292 live births

Embryo culture until D5 with timelapse and frozen for transfer in a subsequent cycle

Every 10 min

11 focal planes

tPNa	t6	cc2
tPNf	t7	cc3
t2	t8	s1
t3	tM	s2
t4	tSB	s3
t5	tB	

Kinetic markers were recorded

The association between KIDScore D5 and gestational weeks until live birth (GW), birth weight (BW), birth length (BL), sex, and incidence of infant malformations (MF) were evaluated using generalized linear regression models adjusted for maternal age, number of fertilized oocytes, number of embryos transferred, and number of babies born.

RESULTS: Mean maternal age 36.08 ± 3.36 years, GW 38.00 ± 1.83 weeks, BW 3.05 ± 0.63 kg, BL 48.25 ± 2.77 cm, MF 4.11% (12/292), with 160 female infants (54.8%) and 132 male infants (45.2%). The mean KIDScore D5 was 7.10 ± 2.19 (range 1 to 9.8).

Variable	β	95% CI	P-value
BW	0.044	0.018-0.070	<0.001
BL	0.187	0.064-0.310	0.003

Association between KIDScore D5 and perinatal outcomes

There was no association between KIDScore D5 and GW (p=0.868), infant sex (p=0.892), or incidence of infant MF (p=0.133).

CONCLUSION: KIDScore assessment on day 5 of embryo development is significantly associated with improved perinatal outcomes, specifically higher birth weight and birth length of infants.