THE EFFECT OF ADVANCED MATERNAL AGE ON EMBRYO MORPHOKINETIC

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Introduction – Reproductive capacity in women declines dramatically with advancing maternal age. The study of embryo morphokinetics through time-lapse analysis has recently been employed for the purpose of embryo scoring, to identify embryos with the highest implantation potential for transfer. Studying embryonic morphokinetic of women with advanced maternal age may provide clues to their decline in fertility.

Aim – To compare the morphokinetic parameters of early embryonic development between embryos of women of advanced maternal age and those of younger women.

Methods – The study cohort included 374 embryos from women ≥ age 42 (AMA) who underwent standard insemination (normal IVF) between Aug 2012 and December 2014, in our unit and that had been cultured in the EmrbyoScope^{TM}. The comparison group included 461 embryos of women

Results – The was no significant differences in timing of key embryonic events, cell cycle times and cleavage synchronicity through the eight-cell stage between the study and the control groups (tPNf, t2-t8, cc2, cc3, s2, , s3; p0.05). Interestingly, a significantly higher percentage of embryos of older women exhibited halted development at various early cleavage states (4-7 cells), failing to reach the 8 cell (71% of the AMA group compared to 81% in the control group; p0.05).

Conclusions – Analysis using time-lapse microscopy enabled us to explore the effect of advanced maternal age on embryo morphokinetics. While embryos of older women which developed through the eight cell stage did so in the same dynamic as those of younger woman, a more significant proportion of the older women's embryos stopped cleaving at earlier stages of development**.**