American Society for Reproductive Medicine 2015 Annual Meeting
October 17 to 21, 2015 ● Baltimore, Maryland

Title:

MALE PARTNER SEXUAL ABSTINENCE LESS THAN 2 OR GREATER THAN 7 DAYS IS NOT ASSOCIATED WITH INCREASED ANEUPLOIDY RATE

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Objective:

Males are routinely counseled to maintain 2-7 days sexual abstinence prior to processing and use during an *in vitro fertilization* (IVF) cycle(s) in order to enhance semen quality. Although obtaining an adequate concentration of motile sperm is an important intermediate objective, deviation from this recommended interval rarely limits a couple from moving forward in their cycle. Instead, the final goal is to maximize the number of euploid embryos prior to transfer selection. This study evaluates if duration of male sexual abstinence is associated with an increase in embryonic aneuploidy.

Design:

Retrospective cohort study

Materials and Methods:

Couples who presented for an IVF cycle and utilized aneuploidy screening (pre-implantation genetic screening (PGS)) from June 2010 - March 2015 were included. Oocyte age was recorded (A: ≤35; B: (35-38]; C: (38-41]; D: (41-43]; and E: >43). Duration of male sexual abstinence was recorded (<2; 2-7; and >7 days). Aneuploidy rate for each group was computed, with 95% confidence intervals calculated by Clopper-Pearson method. Aneuploidy rate was modeled by logistic regression using oocyte age and days of abstinence. The youngest oocyte age group (<35) and recommended abstinence period (2-7) were

considered reference factors. Significance of model term was assessed by chi-square of ANOVA with significance at $p<0.05$.

Results:

Couples (n=709) (female aged 23.4-47.0; males aged 24.3-63.0) underwent 943 fresh IVF cycles. PGS was performed on 4658 embryos, of which 2194 were aneuploid. Increasing oocyte age was associated with significantly increased aneuploidy rates for all age groups relative to group A ($p<0.001$). Aneuploidy rates in men providing semen with <2 days of abstinence (n=51 cycles) (0.42, 0.35-0.49 95% CI) or >7d abstinence (n=43 cycles) (0.41, 0.34-0.47 95% CI) were not significantly different than those with 2-7 days of abstinence (n=849 cycles) (0.46, 0.44-0.48 95% CI) after controlling for oocyte age ($p=0.18$ and 0.24, respectively).

Table:

Oocyte Age	Male Days Abstinence	# Couples	# Cycles	Total Embryos	Aneuploid Embryos	% Aneuploid	95% CI
A	<2 d	14	14	95	24	0.25	[0.17-0.35]
A	2-7 d	188	225	1357	467	0.34	[0.32-0.37]
A	>7 d	16	16	111	34	0.31	[0.22-0.40]
B	<2 d	12	12	38	16	0.42	[0.26-0.59]
B	2-7 d	168	208	1011	407	0.40	[0.37-0.43]
B	>7 d	10	10	64	25	0.39	[0.27-0.52]
C	<2 d	11	13	34	19	0.56	[0.38-0.73]
C	2-7 d	195	269	889	510	0.57	[0.54-0.61]
C	>7 d	10	11	54	30	0.56	[0.41-0.69]
D	<2 d	7	7	20	15	0.75	[0.51-0.91]
D	2-7 d	79	100	239	184	0.77	[0.71-0.82]
D	>7 d	5	5	19	11	0.58	[0.33-0.80]
E	<2 d	4	5	10	8	0.80	[0.44-0.97]
E	2-7 d	37	47	94	79	0.84	[0.75-0.91]
E	>7 d	1	1	1	1	1.00	[0.03-1.00]

Conclusions:

In couples planning to utilize IVF treatment, male abstinence duration outside of the World Health Organization recommended range was not associated with an increased chance of obtaining a chromosomally abnormal embryo. Because of the small number of men maintaining abstinence outside of the recommended range, future studies with randomized durations of abstinence would be needed to establish the modifiable male contribution of abstinence, if any, to the genomic constitution of embryos.

Support:
None