

Does donor body mass index affect the final outcome in egg donation?

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Introduction

Several studies have linked female overweight with impaired outcomes following ART in infertile women, remaining unclear whether is due to a endometrial or gamete factor. This study was designed in an attempt to assess the effect of body mass index (BMI) on clinical outcome in recipients employing the donor model. Also, the influence of this factor in donor ovarian stimulation was evaluated.

Results

A significant increase was observed in terms of gonadotropin consumption when donors with BMI < 24.9 and ≥ 25 were compared (2142.6 vs 2304.4 IU, p=.05). There were no differences between groups in any factor that could influence IVF success (donor and recipient age, recipient BMI, number of donated eggs, fertilization rate, embryo quality, number of transferred embryos). Pregnancy rates, implantation rates and miscarriage rate were calculated for each group: <19.9 (54.7%, 42.9%, 19%); 20-24.9 (49.3%, 37.9%, 13.8%) >25 (45.3%, 34.5%, 10.3%) respectively (not significant).

Material and methods

Retrospective study including 485 oocyte donation cycles performed in Instituto Bernabeu from January to November 2013. Donors were healthy women younger than 35, with BMI 18-28. Three groups were established according to donor BMI. <19.9 (109); 20-24.9 (308) ≥25 (68). Donors were stimulated with 150-300 UI of urofollitropin (Fostipur) depending on antral follicular count. Recipient uterine endometrium was prepared using exogenous estrogen (Progynova) and progesterone (Cyclogest). Statistical analysis was performed by tstudent, ANOVA and chi-square test when appropriate.

	BMI		
	<24.9	>25	P
Age	24,8	24,6	0,79
Gonad dosage (UI)	2143	2304	0,05

Table 1. Gonadotropin consumption in relation to donor body mass index.

	BMI			
	<19,9	20-24,9	>25	P
No. of donated oocytes	11,90	12,14	12,07	0.74
2 PN	7,28	7,74	7,94	0,17
Good Embryo quality day 3 (A+B)	3,96	4,01	3,45	0.42
No. of transferred emb.	1,88	1,76	1,81	0.09
No. of frozen embryos	1,44	1,79	2,05	0.13
Positive β-HCG (%)	67,9	63,3	59,4	0.51
Clinical pregnancy rate (%)	54,7	49,3	45,3	0.46
Implantation rate (%)	42,9	37,9	34,5	0,31
Miscarriage rate (%)	19,0	13,8	10,3	0.51

Table 2. Clinical outcomes in relation to donor body mass index.

Conclusions

According to our results, although not significant slightly impaired pregnancy rates were observed in cases of donor overweight. Assuming homogeneous characteristics of recipients in the study groups, it seems that altered female gamete due to overweight cannot be rejected. These data should be considered during donor selection process in order to optimize final outcome.