
Results

RESULTS

Total number of 243 oocytes were collected from 20 infertile patients who underwent 28 cycles of ICSI treatment. 13 patients (65%) underwent one cycle, 6 patients (30%) underwent 2 cycles and one (5%) patients underwent 3 cycles.

Table (1) shows patient's characteristics.

Table (1): Studied women characteristics (n=20)

Data	Variable
• Patients age range (mean ± SD).	24 –40 (32.3 ± 1.2)
• Duration of infertility.	3-5 (3.2 ± 1.1)
• Patients with 1ry infertility No (%).	6 (30%)
• Patients with 2ry infertility No (%).	14 (70%)
• Amenorrhea or oligomenorrhea No (%).	3 (15%)
• Hirsutism No (%)	2 (10%)
• FSH Iu/L range (mean ± SD).	6-8 (6.7 ± 0.5)
• LH (day 3) Iu/L, range (mean ± SD).	7-10 (8.3 ± 0.9)
• Total testetesterone ng/L (mean ± SD).	1.7 ± 1.2
• Prolactin ng/ml range (mean ± SD).	8-13 (9.1 ± 1.9)

Table (2) shows the causes of infertility among studied women. Tubal factor was present in 8 (40%) patients. Male factor was present in 5 patients (25%) and polycystic ovary was present in 7 patients(35%).

Table (2) : Causes of infertility among studied group (n = 20)

Cause	No	(%)
• Male factor oligospermia.	5	25.0
• Tubal factor.	8	40.0
• Polycystic ovary (PCO).	7	35.0
Total	**20**	**100.0**

Table (3) shows cycle outcome data. The mean number of oocyte aspirated per cycle was 8.7.

Table (3) : Cycle outcome data among studied group

Data	Variable
• Total number of cycles.	28
• Number of retrieved oocytes.	243
• No of oocytes/cycle (mean ± SD).	(8.7 ± 2.2)
• Dose of FSH (mean ± SD) (IU)	2557 ± 1046
• LH on day of hCG administration (mean ± SD)	17- 20 (18.5 ± 1.3)
• Oestradiol on day of hCG administration (mean ± SD)	121.25 ± 19.5

Table (4) shows the assessment of 243 oocytes maturity among the studied group immediately after retrieval, 53 (21.8) oocytes were excluded from the study due to immaturity only, 190 (78.2%) oocytes were included.

Table (4) : Oocyte maturity

Stage	Number	%
• Germinal vesicle (Gv).	22	9.1
• Metaphase I	31	12.7
• Metaphase II	190	78.2
Total	**243**	**100.0**

Table (5) shows cytoplasmic morphology among metaphase II oocytes. The types of cytoplasmic morphological anomalies were dark incorporations, dark cytpolasm (inclusive granularity) and refractile bodies.

Table (5) : Cytoplasmic morphology grades among MII oocytes

Grades	No.	%
Grade 1 : No anomalies.	105	55.3
Grade 2 : one anomaly.	54	28.4
Grade 3 : at least two anomalies	31	16.3
Total	**190**	**100.0**

Table (6) shows first polar body morphology grades. Round or ovoid with smooth surface (grade 1), round or ovoid with rough surface (grade 2), fragmented (grade 3), or large perivitelline space (grade 4).

Table (6): First polar body morphology grades among metaphase II oocytes

Grades	No.	%
Grade 1	58	(30.5
Grade 2	64	33.7
Grade 3	53	27.8
Grade 4	15	8
Total	**190**	**100.0**

Table (7) shows correlation between cytoplasm with morphological anomalies (n = 85) and first polar body grades. Insignificant relationship was found.

Table (7) : Correlation between the cytoplasmic morphological anomalies and first polar body morphology grades among metaphase II oocytes

1st PB grade	≥ 1 anomaly		Normal		Total		χ2	P
	No.	%	No.	%	No.	%		
Grade 1	26	44.8	32	55.2	58	100.0		
Grade 2	28	43.8	36	56.2	64	100.0		
Grade 3	24	45.2	29	54.8	53	100.0	0.05	NS
Grade 4	7	46.7	8	53.3	15	100.0		
Total	**85**	**44.7**	**105**	**55.3**	**190**	**100.0**		

Table (8) shows the relationship between cytoplasmic morphology and fertilization rate in metaphase II oocytes. There was non significant relationship between cytoplasmic morphology and fertilization rate.

Table (8) : correlation between cytoplasmic morphology and fertilization rate in metaphase II oocytes (n = 190)

Cytoplasmic morphology	ICSI results				Total		$\chi 2$	P
	Degenerated		Fertilized					
	N	%	N	%	No.	%		
Grade 1	28	26.7	77	73.3	105	100.0	0.7	NS
Grade 2	15	27.8	39	72.2	54	100.0		
Grade 3	9	29.1	22	70.9	31	100.0		
	52	27.4	138	72.6	190	100.0		

Table (9) shows the relationship between first polar body morphology and fertilization rate. There was significant difference in fertilization rate according to first polar body morphology grades ($P < 0.05$).

Table (9) : Correlation between 1st polar body grades and fertilization rate in metaphase II oocytes (n = 190)

1st P.B. grades	ICSI results				Total		$\chi 2$	P
	Degenerated		Fertilized					
	N	%	N	%	No.	%		
Grade 1	8	13.8	50	86.2	58	100.0		
Grade 2	12	18.8	52	81.2	64	100.0		
Grade 3	23	43.4	30	56.6	53	100.0	**22.65**	**< 0.001**
Grade 4	9	60.0	6	40.0	13	100.0		
Total	52	27.4	138	72.6	190	100.0		

Table (10) Shows the embryo quality according to cytoplasmic morphology among fertilized metaphase II oocytes (n = 138). There was non significant relationship between cytoplasmic morphology and embryo grades.

Table (10) : Correlation between cytoplasmic morphology and embryo quality among fertilized metaphase II oocytes

Fertilized oocytes	Embryoquality				Total		$\chi 2$	P
	< 25% fragmented		> 25% fragmented					
	N	%	N	%	No.	%		
Grade 1	52	68.0	25	32.0	77	100.0	0.12	NS
Grade 2	26	66.7	13	33.3	39	100.0		
Grade 3	14	63.7	8	36.3	22	100.0		
Total	92	66.7	46	33.3	138	100.0		

Table (11) shows the embryo quality according to first polar body morphology among fertilized metaphase II oocytes (n = 138). There was significant relationship between first polar body morphology and embryo quality (P < 0.001).

Table(11) : Correlation between first polar body morphology grades and embryo quality among fertilized metaphase II oocytes

Fertilized oocytes	Embryoquality				Total		Adjusted χ^2	P
	< 25% fragmented		> 25% fragmented					
	N	%	N	%	No.	%		
Grade 1	45	90.0	5	10.0	50	100.0	25.02	< 0.001
Grade 2	32	61.5	20	38.5	52	100.0		
Grade 3	14	46.7	16	63.3	30	100.0		
Grade 4	1	16.7	5	83.3	6	100.0		
Total	92	66.7	46	33.3	138	100.0		

Fig. (12): Grade I :first polar body

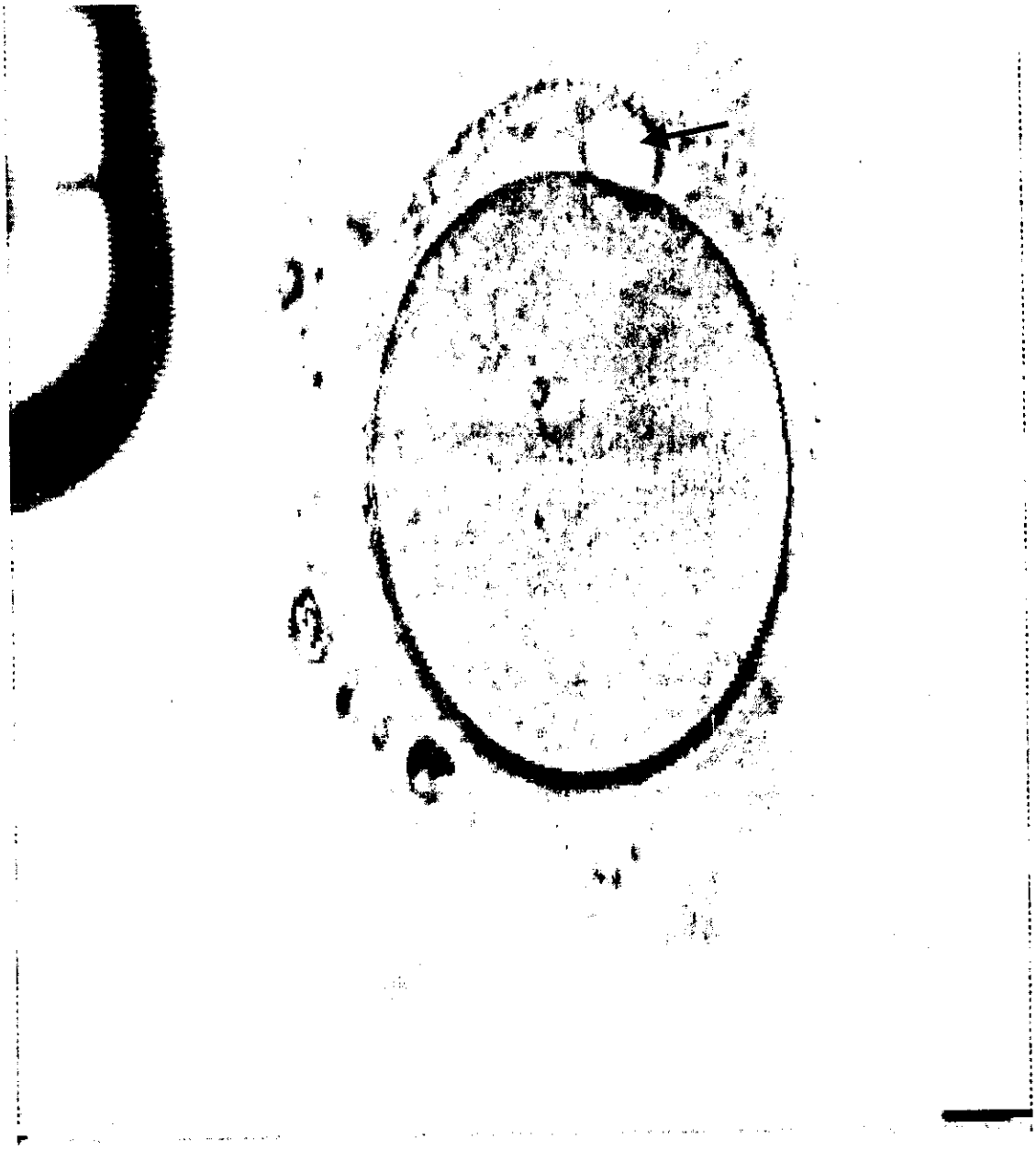

Fig. (13): Grade II : first polar body.

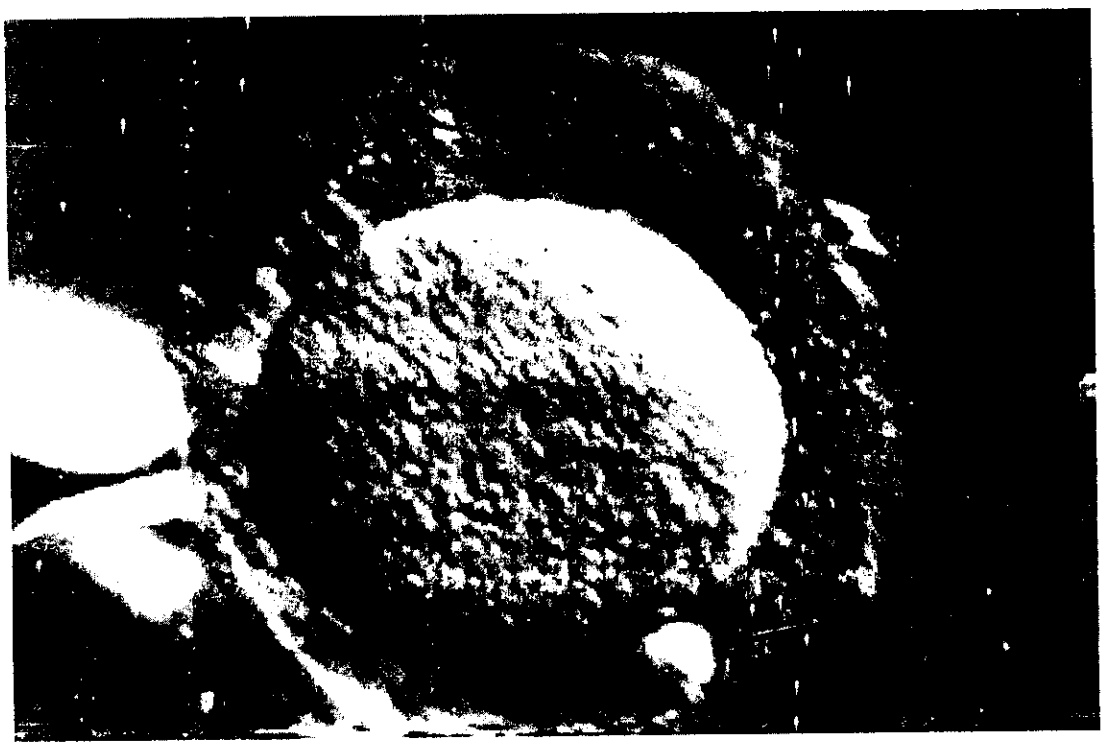

Fig. (14): Grade III : first polar body.

Fig. (15): Grade IV : First polar body.