

Picture of IVF fertilized egg at high magnification. Male and female genetic material (DNA) is in the 2 pronuclei (circular structures) in the center. Polar body is seen at one o'clock - just under the shell.

IVF CYCLE CANCELLATION CLASSIFICATION MULTYCENTR STUDY

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MULTYCENTRAL TRIAL ON IVF CYCLE CANCELLATION AND THEIR CLASSIFICATION

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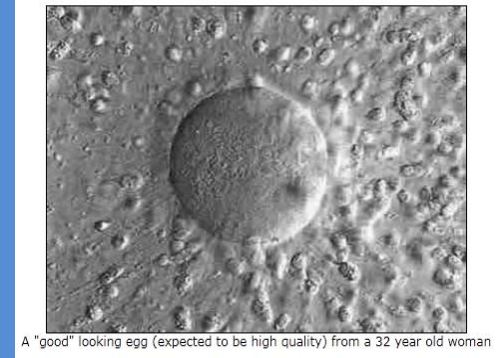
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IVF



% 10 - 15 of married couples are confronted to infertility.

Among them, those who take part in a IVF program...

Primary IVF incidence : %20 - 30

Total IVF incidence : % 50 – 60 estimated

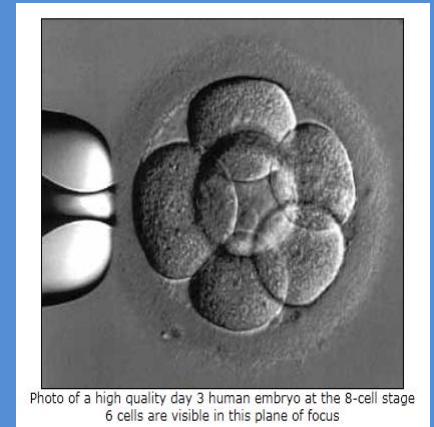
IVF cycle cancellation : %10 - 20 (the highest being % 50)

IVF

IVF INDICATIONS :

1. Unexplained infertility (% 40 - 50)
2. Male Factor (% 30 - 40)
3. Ovarian Factor * (% 20 - 30)
4. Tubal/Tuboperitoneal Factor (%10 - 20)

(*) failure , age , endometrioma



IVF

Nowadays, IVF indications are increasing.

Among these are, impatient couples not wanting to wait, women postponing childbearing, psychologic pressure on infertile couple.

As a result, IVF failures are increasing too.

IVF cycle cancellation take part in these failures.

IVF

For improving succes rate in IVF,
before starting any treatment,

risks of cycle cancellations

should be studied and the secrets
of this subject should be revealed.



IVF CYCLE CANCELLATION

Actually IVF cycle cancellation represents a general identification.

It does not give an idea about the time and the reason of the cancellation.

This is why an

IVF CYCLE CANCELLATION CLASSIFICATION

is needed in order to overcome this complexity.

SUGGESTION

IVF CYCLE CANCELLATION CLASSIFICATION

1. COH Cancellations
2. OPU Cancellations
3. ET Cancellations

IVF CYCLE CANCELLATION CLASSIFICATION

1. COH (Controlled Ovarian Hyperstimulation) Cancellations

Cancellation happened from the start of ovulation induction with gonadotropins to the HCG injection to trigger the maturation of the ovum.

2. OPU (Ovum Pickup) Cancellations

Cancellation happened from the HCG trigger to the time of OPU. OPU can not be done.

3. ET (Embryo Transfer) Cancellations

Cancellation where the embryo transfer can not be done

IVF CYCLE CANCELLATION ETIOLOGIES

- **1. COH CANCELLATION**

- * **Poor Ovarian Response (ovarian / Gntr. Dosage!)**

- No or Few Mature Follicle development (1-2 F)

- ** **OHSS**

- *** **Patient discordance (drug , time ...)**

- **** **Uterine intracavitary pathologies (polip , fibroid ...)**

IVF CYCLE CANCELLATION ETIOLOGIES

- **2. OPU CANCELLATION**

- * No sperm in TESE

- ** Early ovulation

- *** Patient discordance (drug , time ...)

- **** Technical difficulties

IVF CYCLE CANCELLATION ETIOLOGIES

3. ET CANCELLATION

- * Failure of fertilization
 - No fertilization
 - Embryo arrest
 - Bad prognosis embryo
- ** Blighted ovum (Empty F S)
- *** Pathologic PGD results
- **** Uterine intracavitary pathologies (polip , fibroid,..)
- ***** OHSS
- ***** Cervikal stenosis , Thawed embryo pathologies

IVF CYCLE CANCELLATION

1. COH CANCELLATION

- a. Wrong drug use (Gnd., Ag., Ant.) / Uterine Intracavitary pathologies
- b. No Follicle Development , Asynchronization
- c. OHSS / Others
- d. Uterin intracavitary pathologies (such polip , myoma , ..)

2. OPU CANCELLATION

- a. Wrong time HCG or any drug use
- b. Early Ovulation
- c. No sperm found in TESE
- d. Technical difficulties in OPU (Endom., Over Disloc.) / Others

3. ET CANCELLATION

- a. No Ovum development
- b. No Embryo development
 - b.a. Failure of fertilization
 - b.b. Embryo Arrest
 - b.c. Poor quality Embryo
- c. Cervical Pathologies (Stiffness, Stenosis)
- d. OHSS / Thawed Embryo pathologies / Others

1. COH CANCELLATION

a. Poor Ovarian Response

b. Hyperstimulation (OHSS)

c. Uterine Intracavitary Pathologies

d. Patient discordance (wrong drugs/doses...)

2. OPU CANCELLATION

a. No Sperm in TESE

b. Early Ovulation

c. Patient discordance (wrong drugs/doses...)

d. Technical difficulties

3. ET CANCELLATION

a. Failure of fertilization

b. Blighted Ovum (Empty Follicul Syndrom)

c. Pathologic PPGD results

d. Uterine Intracavitary Pathologies

e. OHSS

f. Cervical stenosis

g. Thawed embryo pathologies

IVF CYCLE CANCELLATION

- [J Reprod Med.](#) 2011 Jan-Feb;56(1-2):12-6.
- Selection of first in vitro fertilization cycle stimulation protocol for **good prognosis** patients: gonadotropin releasing hormone antagonist versus agonist protocols.
- [Johnston-MacAnanny EB](#), [DiLuigi AJ](#), [Engmann LL](#), [Maier DB](#), [Benadiva CA](#), [Nulsen JC](#).
- Wake Forest University Center for Reproductive Medicine, Winston-Salem, North Carolina, USA.

RESULTS :	N:378	GnRH-A	GnRh-Ant	p
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Implantation rate :		% 39.4	%39.5	NS
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Clinic Pregnancy rate :		% 43.6	% 48.6	NS
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IVF Cycle Cancellation :		% 22. 4	% 19. 2	NS
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IVF CYCLE CANCELLATION

- [\[Cancellation of IVF-ET cycles: poor prognosis, poor responder, or variability of the response to controlled ovarian hyperstimulation? An analysis of 142 cancellations\]](#).
- Lamazou F, Fuchs F, Grynberg M, Gallot V, Herzog E, Fanchin R, Frydman N, Frydman R
- J Gynecol Obstet Biol Reprod (Paris). 2012 Feb;41(1):41-7. Epub 2011 Aug 10. French.

RESULTS : N: 142 **poor responder** **control** p

Pregnancy rate : % 22 % 35 <0.004

IVF Cycle Cancellation : % 37.8 % 13.3 < 0.05

In Poor Responder grup, clinic pregnancy rate is lower and IVF cycle cancellation rate is higher.

IVF CYCLE CANCELLATION

- Med Pregl. 2011 Nov-Dec;64(11-12):565-9.
- **[Results and experiences after 1000 IVF cycles at the Clinic for Gynecology and Obstetrics in Novi Sad].** [Article in Serbian]
- [Kopitović V](#), [Milatović S](#), [Pjević AT](#), [Bjelica A](#), [Bujas I](#), [Tabs N](#).
- RESULTS : N: 1000 % 56 Male F , % 46 Tubal F

OPU rate : %94.6
Live Birth rate : % 33

IVF Cycle Cancellation : % 14.10

IVF CYCLE CANCELLATION

- [Reprod Biol Endocrinol.](#) 2011 Aug 15;9:115.
- **The predictability of serum anti-Müllerian level in IVF/ICSI outcomes for patients of advanced reproductive age.**
- [Lee RK](#), [Wu FS](#), [Lin MH](#), [Lin SY](#), [Hwu YM](#).

RESULTS : > 40 y N: 1654

AMH (ng/ml) :	< <u>0.48</u>	<u>0.49- 1.22</u>	> <u>1.23</u>	total
E2 pg/ pik :	802	1050	2090	1540
Embryo :	1.8	3.1	4.8	
Pregnant (%) :	0	23	30	26
IVF Cycle C (%) :	47 *	16	1.7	15

Over 40 y , AMH <0.5 ng/ml

practical NO PREGNANCIES
and high IVF CANCELLATION RATE

IVF CYCLE CANCELLATION

[Reprod Biol Endocrinol.](#) 2011 Aug 15;9:115.

The predictability of serum anti-Müllerian level in IVF/ICSI outcomes for patients of advanced reproductive age. [Lee RK](#), [Wu FS](#), [Lin MH](#), [Lin SY](#), [Hwu YM](#).

Table 2 Outcomes of IVF/ICSI cycles in women of advanced reproductive age (≥ 40 years old)

	Total subjects	Serum AMH tertiles (ng/mL)		
		Low (≤ 0.48)	Middle (0.49~1.22)	High (≥ 1.23)
Total cycle	116	21	38	57
Cancelled cycle (%)	17 (14.7)	10 (47.6) [§]	6 (15.7) [*]	1 (1.7)
Mean age	41.5 ± 1.4	42.8 ± 2.3	41.1 ± 1.3	41.3 ± 1.4
Peak E2 level (pg/mL)	1542.1 ± 1146.5	802.6 ± 748.9	1050 ± 699	2095.8 ± 1156.2
Number of oocytes retrieved	6.1 ± 4.6	2.4 ± 2.9	4.7 ± 2.5	8.1 ± 5.1
Number of mature oocytes	4.7 ± 3.7	1.5 ± 1.7 [‡]	3.9 ± 2.5	6.3 ± 3.9
Embryos obtained	3.8 ± 2.9	1.8 ± 2.4	3.1 ± 2.2	4.8 ± 3.1
Embryos transferred	2.8 ± 1.2	1.6 ± 1.3	2.6 ± 1.0	3.2 ± 1.0
Clinical pregnancy per cycle (%)	26 (22.4)	0 (0) [§]	9 (23.7)	17 (29.8)
Abortion per cycle (%)	7 (26.9)	0 (0)	0 (0)	7 (41.2)
Viable pregnancy per cycle (%) [FHB (+) & > 7 wks.]	19 (16.4)	0 (0) [§]	9 (23.7)	10 (17.5)

[§] p < 0.05 compared with the middle tertile and the high tertile

^{*} p < 0.05 compared with the high tertile

[‡] p < 0.05 compared with the middle tertile

IVF CYCLE CANCELLATION

- [Hum Reprod.](#) 2007 Mar;22(3):778-85. Epub 2006 Nov 17.
- **Evaluation of the utility of multiple endocrine and ultrasound measures of ovarian reserve in the prediction of cycle cancellation in a high-risk IVF population.**
- [McIlveen M](#), [Skull JD](#), [Ledger WL](#).

RESULTS : N: 84

FSH > 10 IU /ml , >40 y ,premenopausal...

IVF CANCELLATION RATE : % 15

AMH value is a good parameter to predict IVF success
(only FSH does not reflect)

İN VİTRO FERTİLİZASYON SÜRECİNDE GERÇEKLEŞEN SIKLUS İPTALLERİ KLİNİĞİMİZE AİT VERİLER VE SINIFLAMA

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• RESULTS OF OUR CLINIC : N : 1849 CYCLES , 2002 -2009

2011 2010 2009 2008 2007

IVF Cl . Pregnancy rate : % 10 %20 %26 %24 %23

IVF Live Birth rate : % 7 % 16 %13 %21 %20

IVF Cycle Cancellation : 175 (%9.4)

* COH Cancellation : % 69.7 (122)

** OPU Cancellation : % 6.8 (12)

*** ET Cancellation : % 23.5 (41)

IVF CYCLE CANCELLATION CLASSIFICATION : ANALYSIS OF THE RESULTS OF A MULTI-CENTRAL TRIAL

In total **21627** IVF cycles : **4405 CANCELLED**
IVF cycles have been cancelled : **% 20**

Cycle Cancellation Classification: **THE MOST**

- 1. COH Cancellation : 1138 (% 26)** **Poor ovarian response % 73**
- 2. OPU Cancellation : 766 (% 17)** **No sperm in TESE % 60**
- 3. ET Cancellation : 2501 (%57)** **Failure of fertilization %42**

IVF CYCLE CANCELLATION CLASSIFICATION : ANALYSIS OF THE RESULTS OF A MULTI- CENTRAL TRIAL

- **At the first line we see** ET C (%11,56) ,
than COH C (5.26)
and OPU C (3.54)
- **As a subgroups most etiologies are :**
 - **Poor Ovarian Respons** (%73)
 - **No sperm in Tese** (% 60)
 - **Fertilisation failure** (% 42)

are seen

Total IVF cycle cancellation distribution of multycentral study

Total IVF cycles	21627	
Total cancelled cycles	4405	(20.36 %)
COH cancellation	1138	(5.26 %)
OPU cancellation	766	(3.54 %)
ET cancellation	2501	(11.56 %)

The percentage of three main IVF cancellation group and the distribution of the most common subgroups

Total Cancelled Cycles (4405)		n
ET cancellation (56.77%)	Fertilization failure	1051 (42.02 %)
COH cancellation (25.83%)	Poor ovarian response	826 (72.58 %)
OPU cancellation (17.38%)	Absence of sperm in TESE	462 (60.31 %)

COMPARE

	IIITF STUDY	MULTICENTER STUDY
TOTAL IVF CANCELLATION	% 9.4	% 20,3
COH CANCELLATION	% 6.5 *	% 5.3
OPU CANCELLATION	% 0.7	% 3.5
ET CANCELLATION	% 2.2	% 11.5 *

IVF CYCLE CANCELLATION CLASSIFICATION

RESULTS

For a better understanding of IVF cycle cancellations and a better identification of the reasons in order to overcome IVF failures, we hope this systematic

IVF CYCLE CANCELLATION CLASSIFICATION

1. COH Cancellation
2. OPU Cancellation
3. ET Cancellation

will take place in clinical practice and literature.

IVF CYCLE CANCELLATION CLASSIFICATION

THANKS

