Üreme Tıbbı Derneği ve TJOD Ankara Şubesi Ortak Eğitim Toplantısı

HER YÖNÜYLE PCOS

24 Şubat 2013

PCOS ve IVM

Prof Dr Bülent GÜLEKLİ
Dokuz Eylül Üniversitesi Tıp Fakültesi
Kadın Hastalıkları ve Doğum ABD
Reprodüktif Endokrinoloji Bilim Dalı Öğretim Üyesi

ART için ovarian stimulasyonu ve ovulasyon indüksiyonundaki problemler

- Aşırı cevap verenler (OHSS dahil)
- Kötü cevap verenler
- Zaman, monitorizasyon
- Maliyet
- Yan etkiler
- Riskler

Maliyet

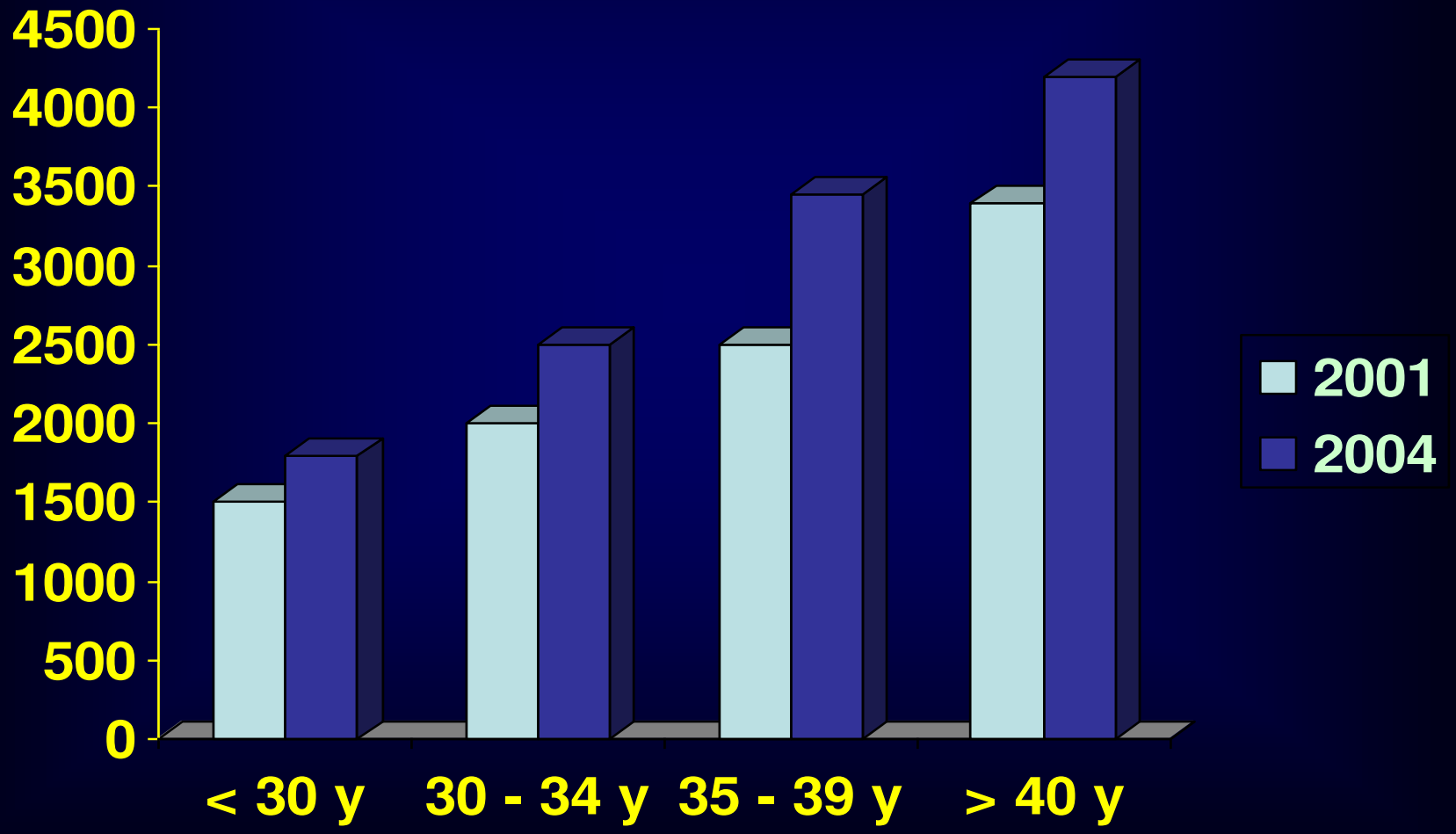
Direkt

GnRH analogları
GnRH antagonistleri
hMG – rec FSH – rec LH

İndirekt

Tekrarlayan visitler
İş gücü kayıpları

Geleneksel IVF'deki 2001 / 2004 ORTALAMA TOTAL İLAÇ MALİYETİ



BG

Riskler / Yan etkiler

- Huy değişiklikleri
- Baş ağrısı
- Depresyon
- Mastalji
- Şişme (bloating) / kilo artışı
- Pelvik ağrı
- Enjeksiyon yerinde ağrı
- Bulantı / kusma
- Allerjik reaksiyonlar

BG

Riskler / Yan etkiler

Ciddi OHSS

Assit
Plevral effüzyon
tromboz

PCO / PCOS x 3-4

MacDougall et al, 1990

BG

In Vitro Oosit Matürasyonu (IVM)

Doğal siklusda stimule edilmemiş overlerden germinal vezikül (GV) aşamasındaki oositleri toplamak

In vitro 24 - 48 saatte matür (M-II evresi) hale getirdikten sonra IVF / ICSI uygulamak

Oosit maturasyonu nedir?

Oosit maturasyonu germinal vesikül (GV) evresinden metafaz –II (M-II) evresine geçişteki birinci meiotik bölünmenin tamamlanması, ve bu sürece fertilizasyon ve erken embryonik gelişim için gerekli olan sitoplazmik maturasyonun eşlik etmesi olarak tanımlanır

İnsan oositleri ile IVM
İlk çalışmalar

- Rock and Menkin (1944): *Science,* 100:105-107
- Edwards (1965): *Nature,* 208:349-351

  - antral folliküllerden elde edilen insan oositlerinin maturasyonu
- Kennedy and Donahue (1969): *Science,* 164:1292-1293.

Stimule edilmemiş overlerden immatur oositler (yumurta bağışı)

- Cha *et al.* (1991): *Fertil. Steril.*, 55:109-113. – sağlıklı ikizlerin doğumu
- Cha *et al.* (1992): *Reprod. Fertil. Dev.*, 4:695-701.
- Hwang *et al.* (1997): *Fertil. Steril.*, 68:1139-1140

IVM Potansiyel Biolojik Avantajları

- **Gonadotropinlerin çok az ya da hiç olmaması**
  Anöploidi oranına etkisi ?
- **Oositin doğal seçilmiş olması**
  Daha iyi embryo gelişimi ve seçimi ?
- **GnRH analoglarının olmaması**
  Oosit / Endometrium üzerine etkisi ?
- **NET SONUÇ**
  Ovarian / uterin fizyolojiye minimal müdahale
  Oosit ve endometriumda maksimum uyum

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IVM Potansiyel Dezavantajları

1. **Daha az sayıda oosit**

   Gerçekte ne kadara ihtiyaç var ?

2. **Mayotik spindle oluşumu esnasında yapay bir çevrede bulunmanın etkisi**

   Li et al 2006 IVM vs IVF oositlerinde daha yüksek oranda anomal spindle ve kromozom anomalisi rapor etmişlerdir

"*MODERN*" IVM TANIMI

- Antral folliküllerden GV oositlerin elde edilmesi ve bunların daha sonra in vitro maturasyonu
- Ovarian stimulasyonun hiç olmaması ya da minimal stimulasyon
- IVF için stimule edilmiş sikluslardan elde edilen immatür oositlere uygulanan "rescue IVM" den farklıdır
- Cumuluslarla kaplı oositlerin maturasyonudur
- Primordial folliküllerin in vitro büyümesi (growth) IVG değildir

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IVM – Klinik Güçlükler

- **Hasta seçimi**
- **Gonadotropin stimulasyonu**
- **hCG tetiklenmesi (priming)**
- **Endometrial hazırlık –** erken mi yoksa geç mi estrojen vermek? Hangi kalınlık?
- **IVF veya ICSI ?**
- **IVM kültür mediumu ?**

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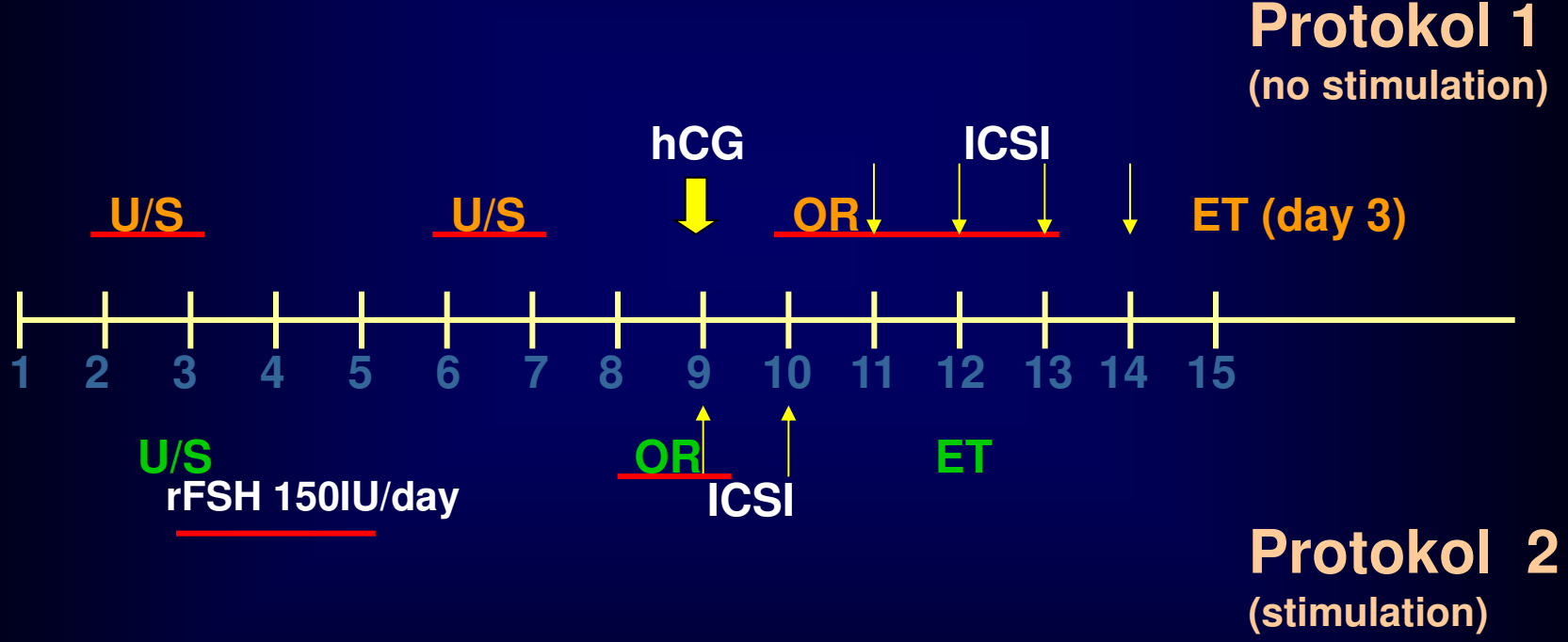
IVM hastalarının klinik hazırlanması



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Reproductive BioMedicine Online (2012) 25, 603–607

www.sciencedirect.com
www.rbmonline.com

ARTICLE

IVF versus ICSI for the fertilization of in-vitro matured human oocytes

M Walls [a,b,*], S Junk [a], JP Ryan [a], R Hart [a,b]

Table 1 Recruited patient outcomes of IVM treatment.

	IVM–IVF	IVM–ICSI
Oocytes		
Total	72	78
Per patient	9.0 ± 2.83	9.75 ± 2.55
Oocytes matured		
Total	57/72 (79.2)	56/78 (71.8)
Per patient	7.1 ± 2.23	7.0 ± 1.6
Matured oocytes fertilized		
Total	34/57 (59.6)	38/56 (67.9)
Per patient	4.2 ± 2.05	4.75 ± 1.16
Useable blastocysts formed		
Total	14/34 (41.2)	18/38 (47.4)
Per patient	1.75 ± 1.39	2.25 ± 1.04
Blastocysts formed		
Total	21/34 (61.8)	21/38 (55.3)
Per patient	2.6 ± 1.5	2.63 ± 1.06

Values are *n*, *n*/total (%) or mean ± SD.
There were no statistically significant differences between the

Oocytes retrieved – no **102**

Oocytes matured - no (%) **79 (77.5)**

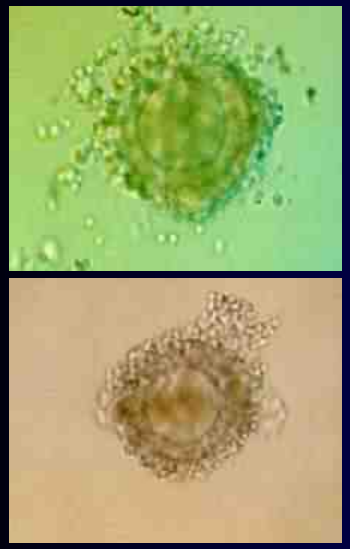
Oocytes fertilized - no (%)

IVF **40 / 33 (82.5 %)**
ICSI **39 / 34 (87.2%)**

Chian RC, Abdul-Jalil AK, Child TJ, Gülekli B, Tan SL

16th Annual Meeting European Society of Human Reproduction and Embryology (ESHRE), Bologna, Italy, June 25-28 2000

IVM of oositleri – laboratuar işlemleri



Immature oocytes

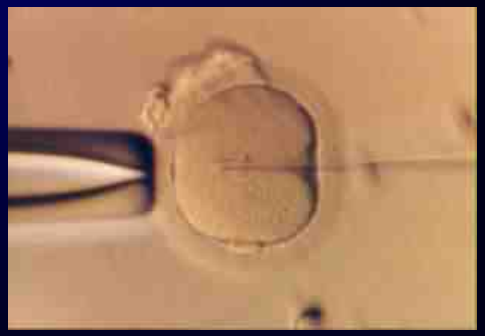
Oositler yıkanır

Maturasyon mediumda oositler kültüre edilir

24 – 48 st kültür

Mature oosit (M-2)

Inseminasyon



Inseminasyon (ICSI)

16-18 saat

Fertilize oositler (2PN)

Klivaj

Transfere hazır embryolar

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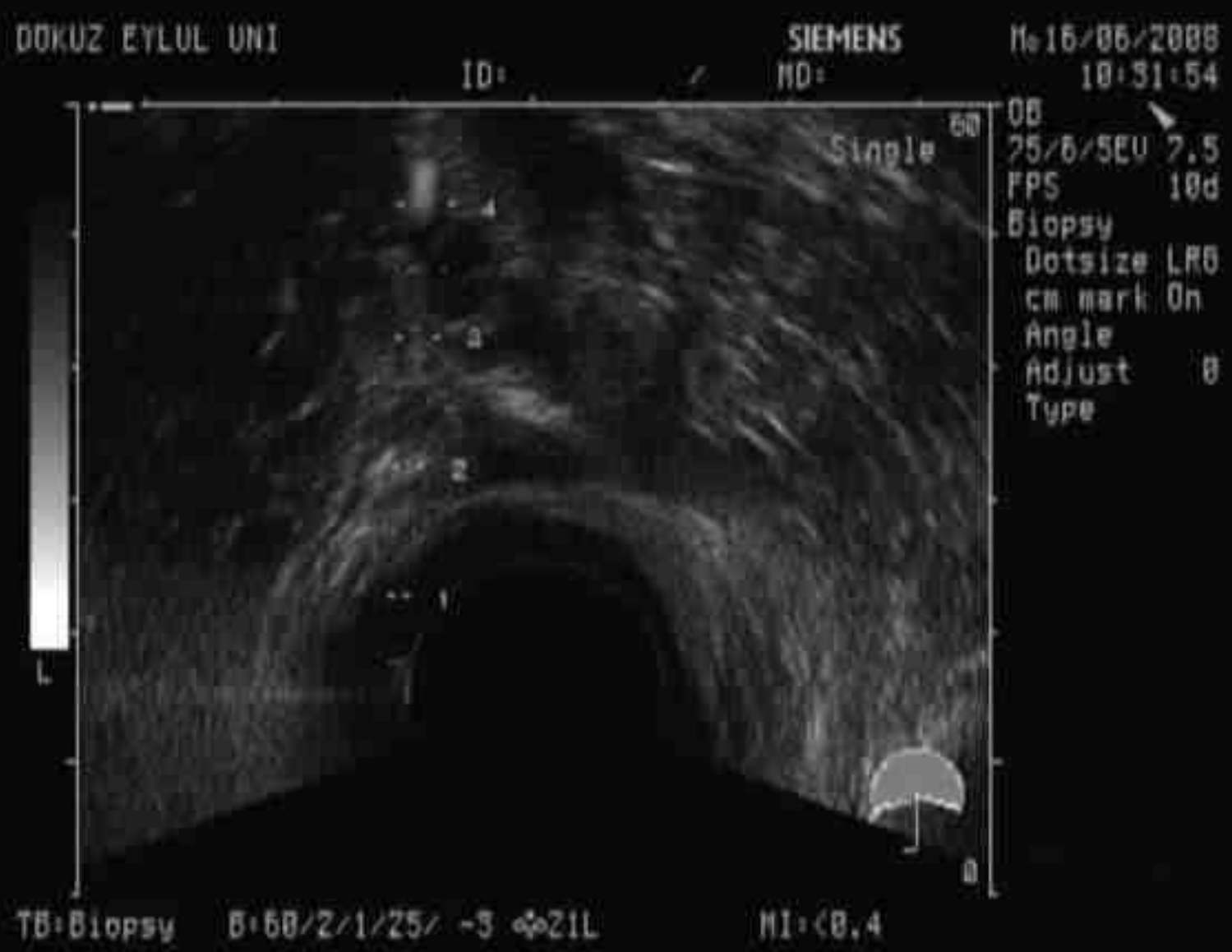
Aspiration of
stimulated
follicles for
IVF cycles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TB:Biopsy B:60/2/1/25/ -3 21L
MI:<0.4

The NEW ENGLAND JOURNAL of MEDICINE

A correction has been published: N Engl J Med 2000;342(3):224.

CORRESPONDENCE

◀ Previous Volume 341:1624-1626 November 18, 1999 Number 21 Next ▶

Priming with Human Chorionic Gonadotropin before Retrieval of Immature Oocytes in Women with Infertility Due to the Polycystic Ovary Syndrome

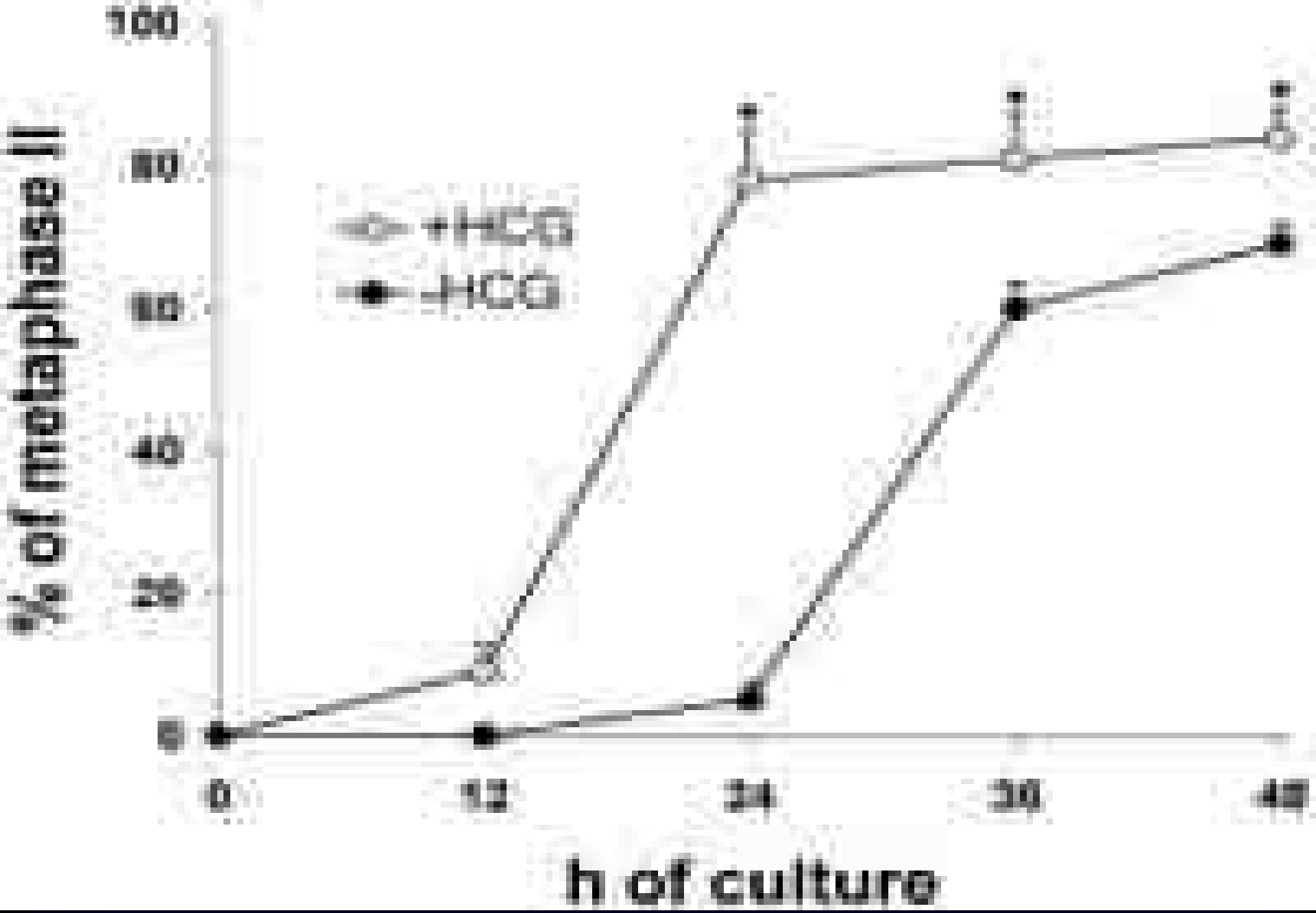
Ri-Cheng Chian, Ph.D.
Bülent Gülekli, M.D.
William M. Buckett, M.D.
Seang-Lin Tan, M.D.
Royal Victoria Hospital
Montreal, QC H3A 1A1, Canada

BG

TABLE 1. RESULTS OF IN VITRO MATURATION AND FERTILIZATION OF OOCYTES FOLLOWED BY EMBRYO TRANSFER IN 20 WOMEN WITH THE POLYCYSTIC OVARY SYNDROME.*

VARIABLE	VALUE
Cycles of in vitro fertilization	25
Age — yr	35.4±4.7
Oocytes retrieved — no.	
Total	249
Mean	10.3±5.4
Oocytes matured — no. (%)	209 (84)
Oocytes fertilized — no. (%)	182 (87)
Embryos cleaved — no. (%)	173 (95)
Embryos transferred — no.	
Total	73
Mean	2.9±0.6
Clinical pregnancies — no. (%)	10 (40)
Implantation — no. (%)	8 (32)

*Plus–minus values are means ±SD.



Chian RC et al., Hum Reprod 15: 165-170, 2000

BG

FERTILITY AND STERILITY®
VOL. 82, NO. 5, NOVEMBER 2004

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Randomized, controlled trial of priming with 10,000 IU versus 20,000 IU of human chorionic gonadotropin in women with polycystic ovary syndrome who are undergoing in vitro maturation

Bulent Gulekli, M.D.
William M. Buckett, M.D.
Ri-Cheng Chian, Ph.D.
Timothy J. Child, M.R.C.O.G.
A. Kamal Abdul-Jalil, M.Sc.
Seang Lin Tan, M.B.B.S.
McGill Reproductive Centre, Royal Victoria Hospital, Montreal, Québec, Canada

BG

TABLE 1

The 24-hour and 48-hour maturation rates (primary outcome measures), the fertilization rate, the cleavage rate, and the cumulative embryo score in the 10,000-IU-hCG and 20,000-IU-hCG groups.

	10,000 IU hCG (n = 180)	20,000 IU hCG (n = 151)	*P* value
24-h oocyte maturation rate (%)	56.7	53.0	NS (*P*=.44)
48-h oocyte maturation rate (%)	70.5	74.2	NS (*P*=.46)
Fertilization rate (after ICSI) (%)	71.7	58.9	*P*=.03
Embryo cleavage rate (%)	90.1	87.9	NS (*P*=.62)
Mean cumulative embryo score	37.9	29.2	NS (*P*=.25)

Note: NS = not significant.

Galeki. 10,000 vs. 20,000 IUhCG for IVM. Feril Steril 2004.

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Clinical outcome of non–hCG-primed oocyte in vitro maturation treatment in patients with polycystic ovaries and polycystic ovary syndrome

Michel De Vos, M.D., Ph.D.,[a] *Carolina Ortega-Hrepich, M.D.,*[a] *Firas K. Albuz, Ph.D.,*[b] *Luis Guzman, M.Sc.,*[b] *Nikolaos P. Polyzos, M.D., Ph.D.,*[a] *Johan Smitz, M.D., Ph.D.,*[b] *and Paul Devroey, M.D., Ph.D.*[a]

[a] Center for Reproductive Medicine, and [b] Follicle Biology Laboratory, Universitair Ziekenhuis Brussel, Brussels, Belgium

TABLE 4

Comparative clinical outcomes of fresh and vitrified-warmed IVM embryo transfer.

	Fresh	Vitrified-warmed	*P* value
Clinical pregnancy rate	5/53 (9.4%)	7/22 (31.8%)	.033
Positive hCG	7/53 (13.2%)	9/22 (40.9%)	.008
Implantation rate	5/72 (6.9%)	7/32 (21.9%)	.043

Note: Values represent numbers and percentages.

De Vos. Non–hCG-primed IVM in PCO and PCOS. Fertil Steril 2011.

Fertility and Sterility® Vol. 96, No. 4, October 2011

OVULATION INDUCTION

FERTILITY AND STERILITY®
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In vitro maturation and fertilization of oocytes from unstimulated normal ovaries, polycystic ovaries, and women with polycystic ovary syndrome

Tim J. Child, M.D., M.R.C.O.G., Ahmad Kamal Abdul-Jalil, M.Sc., Bulent Gulekli, M.D., and Seang Lin Tan, M.D., F.R.C.O.G.

McGill Reproductive Center, Department of Obstetrics and Gynecology, Royal Victoria Hospital, McGill University, Montreal, Quebec, Canada

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TABLE 1

Results of 177 in vitro maturation cycles for infertile women with normal ovaries (group 1), polycystic ovaries (PCOs) (group 2), or PCOS (group 3).

Variable	Group 1 (normal ovaries)	Group 2 (PCOs)	Group 3 (PCOS)
No. of patients (no. of cycles)	46 (56)	43 (53)	52 (68)
Age (y)	36.0 ± 3.8[a]	32.8 ± 4.1	32.9 ± 4.1
Duration of infertility (y)	5.4 ± 4.0	4.3 ± 2.9	4.5 ± 3.3
No. of germinal vesicle oocytes	5.1 ± 3.7[a]	10.0 ± 5.1	11.3 ± 9.0
No. of metaphase II oocytes	4.0 ± 2.8[a]	7.6 ± 4.0	8.7 ± 5.6
No. of oocytes fertilized	2.9 ± 2.0[a]	5.8 ± 2.9	6.9 ± 4.5
No. of cleaving 2PN embryos	2.7 ± 2.0[a]	5.5 ± 2.7	6.3 ± 4.5
No. of embryos transferred (per transfer)	2.6 ± 1.2[a]	3.3 ± 0.9	3.2 ± 0.8
Cumulative embryo score	25.6 ± 16.3[a]	35.0 ± 16.3	35.1 ± 17.9
Pregnancy rate per transfer (%)	4.0 (2/50)[b]	23.1 (12/52)	29.9 (20/67)
Implantation rate (%)	1.5 (2/130)[b]	8.9 (15/169)	9.6 (21/220)
Live birth	2 (1/50)[a]	17.3 (9/52)	14.9 (10/67)

Note: Results are means ± SD or % (*n*) except as noted.

[a] $P<.05$ compared with groups 2 and 3.

[b] $P<.01$ compared with groups 2 and 3.

A Comparison of In Vitro Maturation and In Vitro Fertilization for Women With Polycystic Ovaries

Tim J. Child, MD, MRCOG, Simon J. Phillips, BSc, Ahmad Kamal Abdul-Jalil, MS, Bulent Gulekli, MD, and Seang Lin Tan, MD, FRCOG

Table 1. Results of 107 Age- and Diagnosis-Matched IVM and IVF Treatment Cycles in Infertile Women With Polycystic Ovaries

	IVM	IVF	OR (95% CI)
No. of cycles	107	107	
Age (y)	32.8 ± 4.2	33.1 ± 4.3	
Total injected units (ampoules) of follicle-stimulating hormone	0	2355 ± 833 (31.4 ± 11.1)*	
Oocytes collected	10.3 ± 7.6	14.9 ± 6.5*	
Metaphase II stage oocytes	7.8 ± 4.9	12.0 ± 5.4*	
Fertilized 2PN embryos	6.1 ± 3.8	9.3 ± 4.4*	
Cleaving embryos	5.8 ± 3.7	8.6 ± 4.2*	
Embryos transferred (range)	3.2 ± 0.9 (1–5)	2.7 ± 0.8 (1–6)*	
Embryos cryopreserved (range)	0.8 ± 2.3 (0–14)	1.2 ± 3.0 (0–16)	
Pregnant [*n* (%)]	28 (26.2)	41 (38.3)	0.57 (0.31, 1.06)
Implantation rate (%)	9.5	17.1*	0.51 (0.31, 0.84)
Clinical pregnancy [*n* (%)]	23 (21.5)	36 (33.7)	0.54 (0.28, 1.04)
Live birth [*n* (%)]	17 (15.9)	28 (26.2)	0.53 (0.26, 1.10)
Multiple live births [*n* (% of total live births)]	7 (41.2)	10 (37.0)	1.26 (0.30, 5.11)
Twins	6	9	
Triplets	1	1	
Moderate or severe ovarian hyperstimulation syndrome	0	12 (11.2%)*	

IVM = in vitro maturation; IVF = in vitro fertilization; OR = odds ratio; CI = confidence interval.
Results are means ± standard deviations unless noted.
* $P < .01$.

Obstet Gynecol. 2002 Oct;100(4):665-70

In vitro maturation or in vitro fertilization for women with polycystic ovaries? A case–control study of 194 treatment cycles

Anne-Sophie Gremeau, M.D., Natasha Andreadis, M.D., Muhammad Fatum, M.D., Jo Craig, M.D., Karen Turner, M.D., Enda Mcveigh, M.D., and Tim Child, M.D.

Oxford Fertility Unit, Institute of Reproductive Sciences, Oxford, United Kingdom

Fertil Steril® 2012;98:355–60.

TABLE 2

Cycles characteristics and outcomes of IVF versus IVM.

	IVF group (n = 97)	IVM group (n = 97)	*P* value
Cycle			
Follicles retrieved	22.2 ± 9.0	35.3 ± 18.6	<.0001
Eggs retrieved	17.2 ± 9.9	15.8 ± 7.2	NS
Oocytes/follicle	75.7	48.8	<.0001
Maturation rate	–	65.01	–
Mature oocytes obtained[a]	12.3 ± 6.2	11.2 ± 7.0	NS
Fertilization rate	61.5	62.9	NS
Cleaving embryos	9.6 ± 5.8	6.4 ± 4.8	<.0001
Embryos transferred	1.7 ± 0.6	1.9 ± 0.4	.0043
Day 2	8	13	NS
Day 3	58	80	.0008
Day 5	24	0	<.0001
No transfer	7[c]	4[d]	NS
Embryos frozen	2.6 ± 3.2	1.4 ± 2.7	.0058
Outcome			
Biochemical pregnancy	63.9 (62)	28.9 (28)	<.0001
Clinical pregnancy[b]	50.5 (49)	19.6 (19)	<.0001
Miscarriage	12.2 (6)	15.8 (3)	NS
Live birth rate	44.3 (43)	16.5 (16)	<.0001
Implantation rate	39.4	12.9	<.0001
Twins	25.6 (11)	25 (4)	NS

Note: Values are presented as mean ± SD, percent, or percent (n). NS = not significant.
[a] Oocyte maturation is not assessed on IVF, so we compared 38 ICSI cycles (metaphase II = 469) with 97 IVM cycles (metaphase II = 1,087).
[b] Clinical pregnancy = fetal heart activity at ultrasonographic scan 8 weeks' gestation.
[c] FIV = 4 freeze-all embryo for risk of OHSS + 3 failed fertilization.
[d] MIV = 3 failed fertilization + 1 freeze-all embryo for significant bleeding after oocyte retrieval.

Gremeau. IVM or IVF for women with PCO. Fertil Steril 2012.

TABLE 3

Complications of IVF cycles versus IVM cycles.

	IVF group	IVM group	*P* value
OHSS moderate or severe (Golan)	8[a] (8.2)	0	.0067
Coasting	9 (9.3)	0	.0032
Freeze-all embryo	3 (3.1)	1[b] (1.0)	NS

Note: Values are presented as n (percent) or percent. NS = not significant.
[a] Eight OHSS (five were coasted and one patient had all the embryos frozen).
[b] One freeze-all embryo for massive bleeding after oocyte retrieval.

Gremeau. IVM or IVF for women with PCO. Fertil Steril 2012.

J Assist Reprod Genet
DOI 10.1007/s10815-011-9591-z

ASSISTED REPRODUCTIVE TECHNOLOGIES

IVM is an alternative for patients with PCO after failed conventional IVF attempt

Bulent Gulekli · Muge Kovali · Fulya Aydiner · Sule Dogan · Seda S. Dogan

	IVM	IVF	p
Number of cycles commenced	23	23	
Age (years) (mean±SD)	30.3±3.5	29.9±3.5	NS*
Number of oocytes retrieved (mean±SD)	12.8±6.9	13.7±6.6	NS*
Number of M II oocytes (mean±SD)	9.7±4.5	11.4±4.8	NS*
Number of oocytes fertilized (mean±SD)	6.9±3.6	7.5±3.1	NS*
Number of embryos (mean±SD)	6.2±3.2	6.7±3.2	NS*
Number of ET (mean±SD)	3.4±1.4	2.7±0.8	<0.05*
Clinical pregnancies (%)	7 (30.4%)	1 (4.3%)	<0.05*
Live birth (%)	6 (26.1)	0	<0.05*
Miscarriage (%)	1 (4.3%)	1 (4.3%)	NS*
OHSS (%)	0	4 (17.3%)	NS*

J Assist Reprod Genet

Embryology data from an IVM programme

	McGill	DEU
Average number of oocytes retrieved	14.2	13.4
Percentage of oocytes matured	76.8%	65.8%
Percentage of oocytes fertilized	63.1%	64.2%
Percentage of embryos cleaved	89.0%	87.5%
Average number of embryos transferred	3.9	3.4

BG

TABLE 1

Clinical outcome of IVM cycles in PCO and PCOS patients.

First author and year published (reference citation no.)	No. of cycles	Priming	Average no. of oocytes retrieved	% Maturation (duration of culture in h)	% Fertilization (type of insemination)	% Cleaved embryos	Average no. of embryos transferred	PR (%) per ET	IR (%)	No. of live births	% SAb
Cha 2000 (41)	94	None	13.6	62.2 (48)	68 (ICSI)	88	4.9	27.1	6.9	20	20
Cha 2005 (51)	203	None	15.5	NA	NA	NA	5.0	21.9	5.5	24	37
Chian 2000 (38)	13	hCG vs.	7.8	78.2/85.2 (24/48)	90.7 (ICSI)	94.9	2.8	38.5	16.6	3	40
	11	none	7.4	4.9[a]/68.0[a] (24/48)	83.9 (ICSI)	95.7	2.5	27.3	14.8	3	0
Child 2001 (36)	53 (PCO) vs.	hCG	10.0	76 (48)	76.3 (ICSI)	94.8	3.3	23.1	8.9	9	40
	68 (PCOS)	hCG	11.3	77 (48)	79.3 (ICSI)	91.3	3.2	29.9	9.6	10	52.3
Child 2002 (40)	107	hCG	10.3	76 (48)	78 (ICSI)	74	3.2	21.5	9.5	17	26.1
LeDu 2005 (10)	45	hCG	11.4	54.2/63 (24/48)	70.1 (ICSI)	96.3	2.5	22.5	10.9	6	40
Lin 2003 (39)	35	FSH + hCG vs.	21.9	43.2/76.5 (24/48)	75.8 (ICSI)	89.4	3.8	31.4	9.7	21	13
	33	hCG	23.1	39.2/71.9 (24/48)	69.5 (ICSI)	88.1	3.8	36.4	11.3		
Mikkelsen 2001 (37)	12	None vs.	6.8	44 (24)	69 (ICSI)	64	1.7	0	0	0	0
	24	FSH	6.5	59 (24)[a]	70 (ICSI)	56	1.8	33[a]	21.6	3	62.5
Soderstrom-Anttila 2005 (12)	20 (PCO) vs.	None	9.3	54.9 (30–48)	35.0 (IVF, 13)	85.7	1.7	22.2	13.3	2	0
					72.4 (ICSI, 7)	61.9	2.0	0	0	0	0
	28 (PCOS)	None	14.3	58.2 (30–48)	43.8 (IVF, 18)	82.5	1.7	52.9	34.5	6	33.3
					78.4 (ICSI, 10)	70.9	1.8	22.2	12.5	1	50

Note: NA = not available; PR = pregnancy rate; IR = implantation rate; SAb = spontaneous abortion.

[a] Statistically significant difference compared with the other arm of that study.

27 %

Jurema. In vitro maturation of human oocytes. Fertil Steril 2006.

BG

TABLE 2

Clinical outcome of IVM cycles in women with normal ovaries and regular cycles.

First author and year published (reference citation no.)	No. of cycles	Priming	Average no. of oocytes retrieved	% Maturation (duration of culture in h)	% Fertilization (type of insemination)	% Cleaved embryos	Average no. of embryos transferred	PR (%) per ET	IR (%)	No. of live births	% SAb
Child 2001 (36)	56	hCG	5.1	78.4 (48)	72.5 (ICSI)	93.1	2.6	4	1.5	1	50
Mikkelsen 1999 (50)	10	None vs.	3.7	76 (36)	62 (ICSI)	54	1.8	33.3	18.8	4	20
	10	FSH × 3 d	4	85 (36)	65 (ICSI)	62	1.9	22.2	11.8		
	5	FSH × 3 d, vs.	4.2	71 (48)	61 (ICSI)	48	1.4	20	14.3	1	0
	7	FSH × up to 6 d	2.4	71 (48)	61 (ICSI)	59	1.1	0	0		
Mikkelsen 2000 (48)	87	None	6.1	60 (28–36)	77 (ICSI)	87	2.0	17.4	8.8	9	18.9
Mikkelsen 2001 (49)	132	None	3.8	60 (28–36)	73 (ICSI)	87	NA	18	NA	12	20
Soderstrom-Anttila 2005 (12)	91	None	6.3	66.9 (30–48)	35.9 (IVF) vs.	84.8	1.4	31	22.6	12	33.3
	100	None	6.5	54.5 (30–48)	67.1[a] (ICSI)	85.8	1.5	21	20.0	15	16.7
Yoon 2001 (47)	63	None	9.0	40.7/71.5/74.3 (24/48/56)	72.6 (IVF and ICSI)	89	3.6	17.6	6.5	6	33.3

Note: NA = not available; PR = pregnancy rate; IR = implantation rate; SAb = spontaneous abortion.

[a] Statistically significant difference compared with the other arm of that study.

18.4 %

Jurema. In vitro maturation of human oocytes. Fertil Steril 2006.

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Canadian Fertility and Andrology Prize Paper

Congenital Abnormalities and Perinatal Outcome in Pregnancies Following IVM, IVF, and ICSI Delivered in a Single Center. W. Buckett, R.-C. Chian, H. Holzer, N. Dean, R. Usher, S. Lin Tan. Department of Obstetrics and Gynecology, McGill University, Montreal, Quebec, Canada

Fertility and Sterility, Volume 85, Supplement 2, April 2006, Pages S11-S12

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Obstetric Outcomes and Congenital Abnormalities After In Vitro Maturation, In Vitro Fertilization, and Intracytoplasmic Sperm Injection

William M. Buckett, MD, FRCOG, Ri-Cheng Chian, PhD, Hananel Holzer, MD, Nicola Dean, PhD, Robert Usher, MD, FRCP(C), and Seang Lin Tan, MBBS, FRCOG

CONCLUSION: All ART pregnancies are associated with an increased risk of multiple pregnancy, cesarean delivery, and congenital abnormality. Compared with IVF and ICSI, IVM is not associated with any additional risk.

(Obstet Gynecol 2007;110:885–91)

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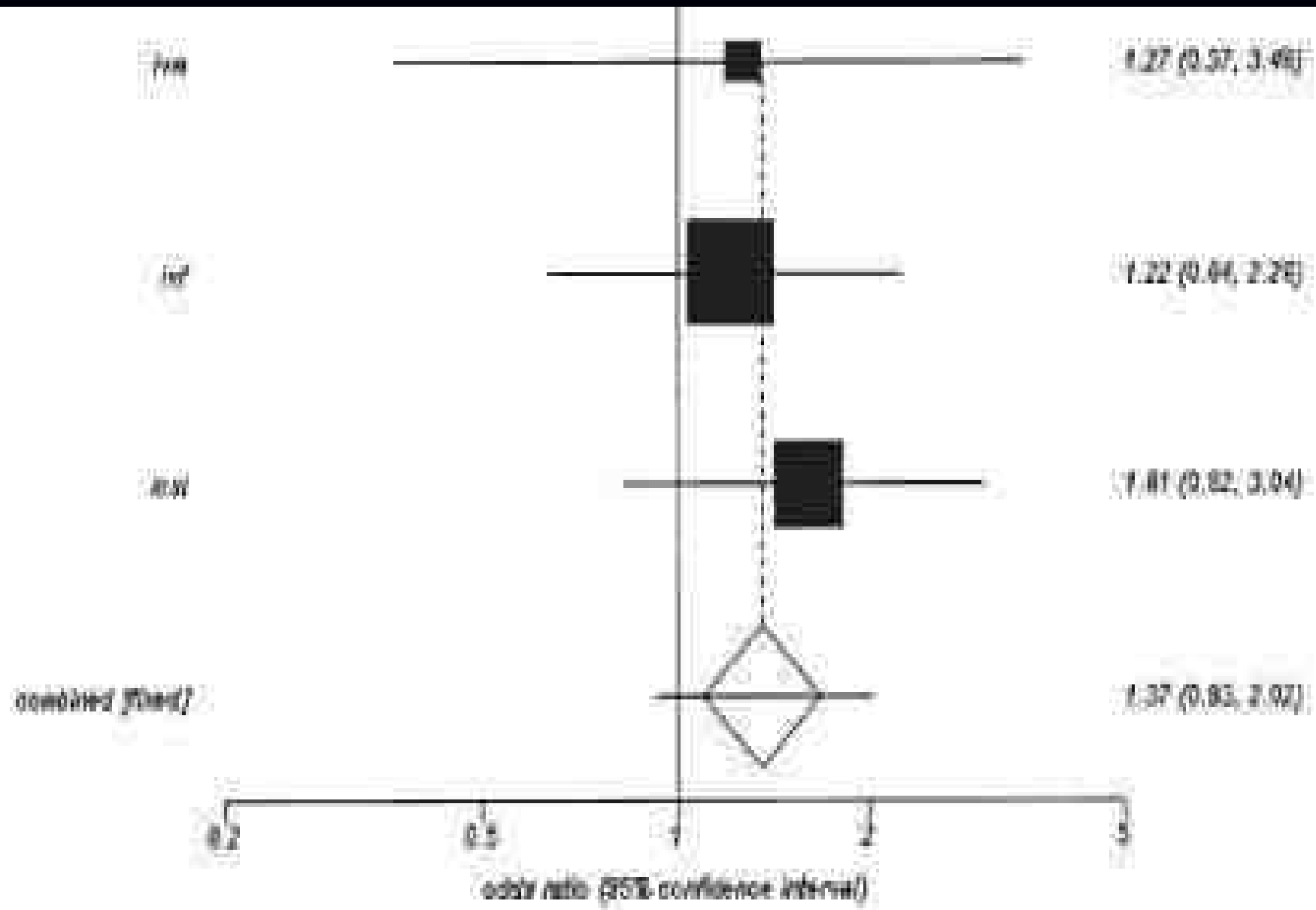

Figure 1. Odds ratio (fixed effects model) of any congential abnormality following conception with IVM, IVF, and ICSI

Table 1. Comparison of outcomes in singleton pregnancies conceived following IVM, IVF, ICSI, or spontaneously (age- and parity-matched controls)

	IVM (n = 31)	IVF (n = 133)	ICSI (n = 104)	Controls (n = 439)	*P*-values versus controls
Mean birthweight (g)	3482	3209*	3163*	3317	All $P > 0.05$ ($^*0.05 < P < 0.10$)
Proportion LBW (%)	1/31 (3%)	14/133 (10%)	15/104 (14%)	30/439 (7%)	All $P > 0.10$
Proportion VLBW (%)	0/31 (0%)	1/133 (1%)	3/104 (3%)	8/439 (2%)	All $P > 0.10$
Proportion of macrosomic babies (%)	3/31 (10%)	5/133 (4%)	2/104 (2%)	22/439 (5%)	All $P > 0.10$
Mean gestational age (weeks + days)	39 + 3	38 + 3*	38 + 0*	39 + 6	IVM $P = 0.9$ IVF $P < 0.0001$ ICSI $P < 0.001$
Proportion delivery < 37 weeks	2/31 (6%)	23/133* (17%)	25/104* (24%)	38/439 (9%)	IVM $P = 0.9$ IVF $P < 0.01$ ICSI $P < 0.001$
Proportion delivery < 34 weeks	0/31 (0%)	5/133 (4%)	8/104 (8%)	18/439 (4%)	All $P > 0.05$

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Sonuç

- Ovarian stimulasyona ait risklerden arınmış emin bir tedavi yöntemidir
- Özellikle ART gereksinimi olan PCO / PCOS ‘lu kadınlar için uygun görünmektedir
- Diğer ART yöntemleri kadar güvenlidir
- Daha fazla merkezin sonuçlarına gereksinim vardır

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