



Cross-border reproductive care: information and reflection

Special Interest Group
Ethics and Law & the Paramedical Group

1

27 June 2010
Rome, Italy

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Organised by the Special Interest Group Ethics & Law and the Paramedical Group

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ESHRE – European Society of Human Reproduction and Embryology

What is ESHRE?

ESHRE was founded in 1985 and its **Mission Statement** is to:

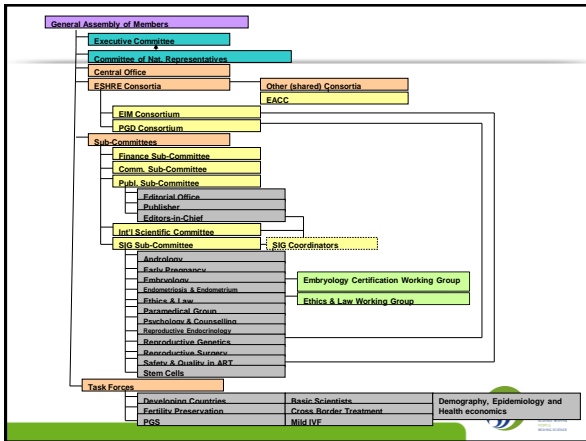
- promote interest in, and understanding of, reproductive science and medicine.
- facilitate research and dissemination of research findings in human reproduction and embryology to the general public, scientists, clinicians and patient associations.
- inform politicians and policy makers in Europe.
- promote improvements in clinical practice through educational activities
- develop and maintain data registries
- implement methods to improve safety and quality assurance



Executive Committee 2009/2011

Chairman	• Luca Gianaroli	Italy
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	• Françoise Shenfield	United Kingdom
	• Etienne Van den Abbeel	Belgium
	• Heidi Van Ranst	Belgium
	• Veljko Vlaisavljevic	Slovenia
	• Søren Ziebe	Denmark






ESHRE Activities – Annual Meeting

- One of the most important events in reproductive science and medicine
- Steady increase in terms of attendance and of scientific recognition


Track record:
 ESHRE 2008 – Barcelona: 7559 participants
 ESHRE 2009 – Amsterdam: 8132 participants

Future meetings:
 ESHRE 2010 – Rome, 27-30 June 2010
 ESHRE 2011 – Stockholm, 3-6 July 2011




ESHRE Activities – Scientific Journals



Human Reproduction with impact factor 3.773



Human Reproduction Update with impact factor 7.590



Molecular Human Reproduction with impact factor 2.537

ESHRE Activities – Campus and Data Collection

- Educational Activities / Workshops
 - Meetings on dedicated topics are organised across Europe
 - Organised by the Special Interest Groups
 - Visit: www.eshre.eu under CALENDAR
- Data collection and monitoring
 - EIM data collection
 - PGD data collection
 - Cross border reproductive care survey



ESHRE Activities - Other

- Embryology Certification
- Guidelines & position papers
- News magazine "Focus on Reproduction"
- Web services:
 - RSS feeds for news in reproductive medicine / science
 - Find a member
 - ESHRE Community



ESHRE Membership (1/3)

- ESHRE represents over 5,300 members (infertility specialists, embryologists, geneticists, stem cell scientists, developmental biologists, technicians and nurses)
- Overall, the membership is distributed over 114 different countries, with 50% of members from Europe (EU). 11% come from the US, India and Australia.



ESHRE Membership (2/3)

	1 yr	3 yrs
Ordinary Member	€ 60	€ 180
Paramedical Member*	€ 30	€ 90
Student Member**	€ 30	N.A.

*Paramedical membership applies to support personnel working in a routine environment such as nurses and lab technicians.

**Student membership applies to undergraduate, graduate and medical students, residents and post-doctoral research trainees.



ESHRE Membership – Benefits (3/3)

1) Reduced registration fees for all ESHRE activities:

Annual Meeting	Ordinary	€ 480	(€ 720)
	Students/Paramedicals	€ 240	(€ 360)
Workshops	All members	€ 150	(€ 200)

2) Reduced subscription fees to all ESHRE journals – e.g. for Human Reproduction €191 (€ 573!)

3) ESHRE monthly e-newsletter

4) News Magazine "Focus on Reproduction" (3 issues p. a.)

5) Active participation in the Society's policy-making



Special Interest Groups (SIGs)

The SIGs reflect the scientific interests of the Society's membership and bring together members of the Society in sub-fields of common interest

Andrology	Psychology & Counselling
Early Pregnancy	Reproductive Genetics
Embryology	Reproductive Surgery
Endometriosis / Endometrium	Stem Cells
Ethics & Law	Reproductive Endocrinology
Safety & Quality in ART	



Task Forces

A task force is a unit established to work on a single defined task / activity

- Fertility Preservation in Severe Diseases
- Developing Countries and Infertility
- Cross Border Reproductive Care
- Reproduction and Society
- Basic Reproductive Science
- Fertility and Viral Diseases
- Management of Infertility Units
- PGS
- EU Tissues and Cells Directive



Annual Meeting

Rome, Italy 27 June to 30 June 2010



Pre-congress courses (27 June):

- PCC 1: Cross-border reproductive care: information and reflection
- PCC 2: From gametes to embryo: genetics and developmental biology
- PCC 3: New developments in the diagnosis and management of early pregnancy complications
- PCC 4: Basic course on environment and human male reproduction
- PCC 5: The lost art of ovulation induction
- PCC 6: Endometriosis: How new technologies may help
- PCC 7: NOTES and single access surgery
- PCC 8: Stem cells in reproductive medicine
- PCC 9: Current developments and their impact on counselling
- PCC 10: Patient-centred fertility care
- PCC 11: Fertility preservation in cancer disease
- PCC 12: ESHRE journals course for authors



Annual Meeting – Scientific Programme (1/2)

Rome, Italy 27 June to 30 June 2010



- Molecular timing in reproduction
- Rise and decline of the male
- Pluripotency
- Preventing maternal death
- Use and abuse of sperm in ART
- Live surgery
- Emerging technologies in the ART laboratory
- Debate: *Multiple natural cycle IVF versus single stimulated cycle and freezing*



Annual Meeting – Scientific Programme (2/2)

- Fertility preservation
- Congenital malformations
- ESHRE guidelines
- Data from the PGD Consortium
- European IVF Monitoring 2007
- Debate: *Selection of male/female gametes*
- Third party reproduction in the United States
- Debate: *Alternative Medicine, patients feeling in control?*
- Historical lecture: "Catholicism and human reproduction"



Certificate of attendance

- 1/ Please fill out the evaluation form during the campus
- 2/ After the campus you can retrieve your certificate of attendance at www.eshre.eu
- 3/ You need to enter the results of the evaluation form online
- 4/ Once the results are entered, you can print the certificate of attendance from the ESHRE website
- 5/ After the campus you will receive an email from ESHRE with the instructions
- 6/ You will have TWO WEEKS to print your certificate of attendance



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PRE-CONGRESS COURSE 1 - Programme

Cross-border reproductive care: information and reflection

Organised by the Special Interest Group Ethics & Law and the Paramedical Group

Course coordinators: Guido de Wert (The Netherlands) and Heidi Van Ranst (Belgium)

Course description: This joint pre-congress course of the Paramedical Group and the Special Interest Group Ethics & Law focuses on cross-border reproductive care. Clearly, this phenomenon creates a lot of commotion, but there is an urgent need for more information about and reflection on this practice and its implications. Relevant questions to be addressed include: Why do people engage in cross-border travelling in order to receive reproductive care? What are the pros and cons from a moral point of view? What about possible conflicts linked to the responsibilities of professionals? What are the perceptions and experiences of patients directly involved? What measures could be taken to limit the number of patients that have to travel abroad and/or to guarantee that all patients get adequate treatment wherever they go?

Target audience: Nurses, counsellors, lab technicians and affiliated paramedics, doctors involved in medically assisted reproduction, ethicists, lawyers, policy-makers.

Scientific programme:

Background: evidence and ethics

- 09:00 – 09:15 Introduction - **Guido de Wert (The Netherlands) and Heidi Van Ranst (Belgium)**
- 09:15 – 09:45 Cross-border reproductive care: some data - **Françoise Shenfield (United Kingdom)**
- 09:45 – 10:15 Normative aspects - **Richard Storrow (USA)**
- 10:15 – 10:30 Discussion
- 10:30 – 11:00 Coffee break

Effects of changes in legislation on clinical practice – case studies

- 11:00 – 11:30 How changes in Italian legislation have influenced medical practice - **Filippo Ubaldi (Italy)**
- 11:30 – 12:00 Implications of Italian legislation for laboratory practice - **Cristina Magli (Italy)**
- 12:00 – 12:30 Discussion
- 12:30 – 13:30 Lunch

Case studies (continued)

- 13:30 – 14:00 Cross-border reproductive care and embryo donation: case study from the UK – **Heidi Birch (United Kingdom)**
- 14:00 – 14:30 Cross-border reproductive care and sperm donation: case study from Belgium – **Patricia Baetens (Belgium)**
- 14:30 – 15:00 Discussion
- 15:00 – 15:30 Coffee break
- 15:30 – 16:00 Cross-border reproductive care and oocyte donation: case study from Spain – **Vanessa Mendez (Spain)**

16:00 – 16:30 Cross-border reproductive care: patient's perception - **Marcia Inhorn (USA)**
16.30 – 17.00 Discussion
17:00 – 17:10 Conclusions and closure of the course



Cross border reproductive care: some European data

Françoise Shenfield, Coordinator: taskforce cross border reproductive care , member of Ethics and Law taskforce, Clinical lecturer UCLH, London

Rome, ESHRE annual meeting 2010

Aims and objectives

- Provide evidence based on data in the field of cross border reproductive care
- Facilitate understanding of our patients motivations to cross border, with their national variations
- Enable analysis of legal and ethical questions with the evidence provided

No conflict of interest

- commercial relationships : none
- activities that might be perceived as a potential conflict of interest : none



Collaborative study: Ethics and Law TF + EIM

News headlines, web adverts, patients going abroad, many practical and ethical issues

Semantics as a symbol: from " fertility tourism" to "cross border reproductive care" via "exile"

- Refs: Pennings 2002 to 2005, Matorras 2005, ESHRE Taskforce Law and Ethics 15, Cross border reproductive care, Hum Reprod 2008; 23:2182-2184, Sep 2009 Inhorn and Patrizio, *Fert and Ster* 2009, 92: 904-906

- *Cross border reproductive care in six European countries* F. Shenfield; J. de Mouzon; G. Pennings; A.P. Ferraretti; A. Nyboe Andersen; G. de Wert; V. Goossens; the ESHRE Taskforce on Cross Border Reproductive Care , *Human Reproduction* 2010; doi: 10.1093/humrep/deq057



Countries and Clinics				Study on Cross-Border	
EIM report 2005					
Country	Total clinics	Clinics reporting to EIM	Cycles reported to EIM	Clinics in the study (% on EIM)	Questionnaires received
Denmark	21	21	11.931	21 (100%)	153
Slovenia	3	3	2907	3 (100%)	65
Belgium	18	18	22.012	8 (45%)	375
Czech Rep	22	10	5168	6 (60%)	253
Switzerland	22	22	6126	2 (10%)	201
Spain	184	131	41.689	4 (3%)	183
Total/year	270	205	89.833		
Estimation for month			-7500		1.230 (16.5%)

Centre selection mode according to country of origin				
Country of origin	Internet	Patients organization	Friends	Doctor
Italy	25.3	1.5	25.8	65.2
Germany	65.0	4.0	11.9	35.6
Netherlands	42.3	6.0	20.8	39.6
France	44.9	10.3	29.0	27.1
Norway	49.3	6.0	22.4	31.3
UK	58.5	18.9	15.1	28.3
Sweden	73.6	9.4	24.5	13.2
TOTAL	41.1	5.0	24.2	44.2

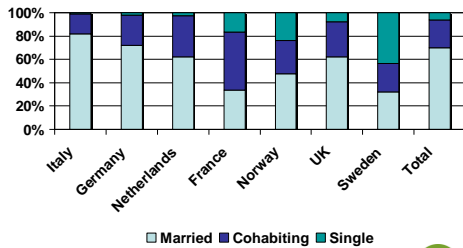
Protocol
<ul style="list-style-type: none"> • Study design: open, European, multi centre, transversal t study • Inclusion criteria <ul style="list-style-type: none"> • Six countries <ul style="list-style-type: none"> • Known as receiving many patients • With voluntary investigators • 44 participating centres • All voluntary patients in one calendar month • Two simple forms <ul style="list-style-type: none"> • One per patient (one page) • One per centre on the month centre activity (one table)

Women's age in our study

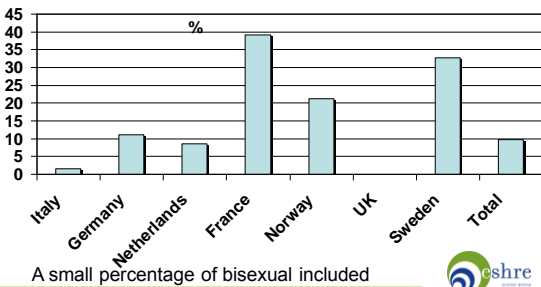
- Mean age: 37.3
- Age range: 21 to 51 years
- Proportion of women= > 40: 34.9% for all patients.
- Individual countries: 51.1% for Germany and 63.5% for the UK, compared to 32.2% for Italy and 30.2% for France
- Older than EIM report: >40 = 33.2% of Italian vs. 20.7% in EIM ; for Germany (51.1% vs. 11.1%,), and France (30.2% vs. 12.7%) (EIM 2005 data, 2009, Hum Reprod 24, 1267-1207)



Civil status according to country of origin



Homosexual women according to country of origin



General reasons for travelling according to the patients' country of residence

Patients' residence	Illegal	Access difficulty	Better quality	Past failure
Italy	70.6	2.6	46.3	26.1
Germany	80.2	6.8	63.8	43.5
Netherlands	32.2	7.4	53.0	25.5
France	64.5	12.2	20.6	18.7
Norway	71.6	0.0	22.4	16.4
UK	9.4	34.0	28.3	37.7
Sweden	56.6	13.2	24.5	5.7
Total	n 674	86	531	358
	% 54.8	7.0	23.2	29.1



X border reasons X: legal (1) and "political" (2)

- **1. Legal reasons** were predominant for **Italian** patients (70.6%), and the German (80.2%), French (64.5%), and Norwegian (71.6%).
- **2. Access** was more often noted in UK patients (**34.0%**)
- **3. Quality of care** was an important factor in most of countries
- Donation: *18.3% of patients were looking for semen donation, 22.8% for egg donation and 3.4% for embryo donation*
- *Majority of IUI for French (53.3%) and Swedish (62.3%) patients*



Legal aspects : specific examples

Italians go for DI to Switzerland, OD to Spain...
 and seek "QUALITY" treatment": Does this relate to the initial legal ban of cryo preservation? : Spring 2009 , Supreme "Corte" removed the limit of max of 3 embryos to be generated, did not cancel ban of embryo cryo preservation , but possible now to cryo- preserve when "clinically necessary" (clinical decision, on what is best for patient , according to best outcome and risk)

Germans go to the Czech Rep for OD

French lesbians go to Belgium for DI

Swedish women go to Denmark: ? For non anonymous donation; single women denied access



Politico/legal aspects

- Access: UK, main reason to X border, a question of justice and access to ART (barriers of age, BMI, W/L, lack of donors)
- Latest EIM figures show that Nordic countries are most generous, a political decision of funding

Is this a concern for outgoing countries, or is it a "safety valve" (G Pennings), which allows law makers to remain *unchallenged...and complacent*?

Political larger sense, where law is restrictive to married couples, age barrier or difficult access (The Netherlands, UK), or PGD is banned because it is deemed "eugenic" (Germany), autonomous agents "vote with their feet"



Aim: "Ensure safety for all concerned "...

1. Safety issues, easy (ier?) aspects

- Centres and labs : easy, although sometimes bureaucratic: Certification, accreditation (national and supra national)
- European Tissue directive, being implemented
- ESHRE lab and clinics certification

2. Less easy: safety for gametes donors ...: recruitment, donation against compensation or financial pressure/ exploitation



The European dimension

- Proposal for a Directive of the European Parliament and of the Council on the application of patients' rights in cross-border healthcare, Presented by the European Commission on 2 July 2008, Copyright: European Communities, 2008; Directorate-General for Health and Consumers
- European Commission – B-1049 Brussels
- http://ec.europa.eu/dgs/health_consumer/index_en.htm
- How will it affect our patients, especially if there is no national (or private) insurance cover?...



Mc Kelvey, David, Jauniaux and Shenfield , BROG: complications

How IVF tourists and their multiple babies overload the NHS

By Jenny Hoppe

Last updated at 12:35 AM on 20th September 2008

Doctors have pleaded for the first time for babies on the health service raised by women who have multiple births after going abroad for fertility treatment.

New evidence shows that one in four women having triplets or more as a result of IVF treatment had conceived outside the UK.

They travel overseas for IVF because it is cheaper and they are likely to get a higher number of embryos used in treatment, according to fertility specialists who carried out a study at a leading London hospital.



ESHRE's aims: COP (Paris, May 2010)/certification??

- Promote **awareness and information** at all levels (government, patients and professional), warn patients/citizens re: possible dangers
- Promote **equitable** access for all citizens, extend the portability of health insurance to reproductive health.
- Promote **means** (guidelines, certification?) ... to guarantee **safe and effective treatment** when X borders (technical, medical, ethical, psychological counselling)
- Role of patients' organisations: ? Web info ...



Further a field than Europe

- International dimension
 - "Forum" Cross border cooperation, started last January Ottawa, cross Atlantic and beyond
- Establish a Code of Practice, which would include practical (clinical), psychological and ethical aspects
- Keeping in mind legal/statutory complexities; (ambivalent) effect on low income countries



Cross-border reproductive care (CBRC): normative aspects

Richard F Storrow, JD
Professor of Law
City University of New York

Disclosure: The author possesses no conflicts of interest or affiliations relevant to the subject of this presentation.

Learning objectives

- To fashion a normative lens through which to evaluate CBRC
- To appreciate the law and ethics nexus that contributes to CBRC
- To understand and evaluate interests of stakeholders in CBRC or its prevention
- To discuss CBRC's possible impact on the home country and the host country
- To formulate and evaluate potential normative responses to CBRC

Normative lenses

- Bioethics
 - Autonomy
 - Beneficence and non maleficence
 - Justice
 - Dignity and human rights
 - Welfare of the child
- Ethics and law
 - Diverse regulatory models (Nielsen 1996)
 - *laissez-faire*
 - liberal regulatory
 - cautious regulatory
 - prohibitive

ESHRE Task Force 15: CBRC
Hum Reprod 2008;**23**;2182-2184

- CBRC signals “structural deficit”
- Normative recommendations
 - Patients’ groups obligations
 - Physicians’ obligations

Stakeholders

- Patients
 - Prospective parents
 - Donors
- Future children
- Physicians
- Government
- Special-interest groups

Prospective Parents: Motivations

- Quality sensitive patients--affluent patients seeking sophisticated services
- Price-sensitive patients--middle class patients seeking less expensive medical procedures
- Desire for privacy
- Law evasion
- Reduce waiting time
- Seek experimental or controversial care

Prospective Parents: Bioethics

- Autonomy
 - procreative autonomy, “right to found family,” etc.
 - not absolute
 - eg: abortion
 - exile may undermine autonomy
- Distributive justice
 - Pro: allows those “priced out” of IVF in home country to afford it abroad
 - Con: allows only those with sufficient funds to pursue IVF

Future children

- Welfare of child as a counterbalance to parental autonomy
 - Commodification of offspring may pose danger to well being
 - Possible harm to child not raised by biological progenitors
- Justice = equality + rights
 - Equality interest in clarity of legal parentage
 - Right to know origins and/or identity of biological progenitors
- CBRC has potential to undermine welfare, justice

Physicians

- Beneficence and non maleficence
 - Medical ethics framework balances duty to patients with physicians’ autonomy
 - eg: duty to provide informed consent
 - eg: physicians’ conscience versus non-discrimination principle
- Law may conflict with medical ethics
- CBRC may enhance physicians’ compliance with duties to refer and promote patient safety

Government as Paresns Patriae

- Power to legislate within limits
 - Health and safety
 - Medical licensure
 - Informed consent
 - Welfare and morals
 - Human dignity
- Minimum requirement of rationality
- CBRC as “safety valve” (Pennings 2002)

Potential impact on home country

- Increased health care costs (McKelvey et al. 2009)
- Black markets, eg: Sweden, Canada
- Exiled citizenry (Inhorn et al. 2009)
- Importation of the reproductive harm sought to be avoided at home
- Insufficiently rational legislation, legislation that prohibits symbolic harm
- More study needed

Potential impact on host country

- Higher prices for local people
 - Egg sharing schemes may proliferate response (Merlet 2010)
- Fewer resources to attend to health care for the local population, e.g.: transplant tourism in Turkey (Merlet 2010)
- Migration of health care personnel into the private sector (Dayrit 2007)
- Exportation of harm from home country to host country
- Harm to vulnerable egg providers or gestational surrogates

Potential Normative Responses

- Moral pluralism
 - Pennings, *J Med Ethics; Human Reproduction*
- Reproductive exile
 - Inhorn and Patrizio, *Fertility & Sterility*
- Regulatory trust
 - Carbone and Gottheim, *J Gender Race & Justice*
- Harmonization
 - Ziebe and Devroey, *Human Reproduction Update*

Potential Normative Responses

- Criminal penalties, eg: Turkey
- Harmonisation or uniformisation
- Regulatory “creativity”
- Subsidiarity and proportionality
- Heightened rationality principle
 - ESHRE Task Force 4: “objections based on ill articulated feelings of distaste and repulsion”
- Harm to women (Boetzkes 2000)

Conclusions

- CBRC does not sufficiently promote moral pluralism
- CBRC enables government to enact stricter laws
- Slippage between claimed harms and the law signals a failure of legislative rationality
- Restrictive reproductive laws should exhibit heightened rationality before we permit them to contribute to CBRC

References

- Boetzkes E. Symbolic harm and reproductive practices. In Freeman MDA and Lewis ADE (eds) *Law and medicine*. 2000. Oxford University Press, Oxford, UK, pp. 327-339.
- Blyth E and Farrand A. Reproductive tourism: a price worth paying for reproductive autonomy? *Critical Social Policy* 2005;**25**;91-114.
- Carbone J and Gottheim P. Markets, subsidies, regulation and trust: building ethical understandings into the market for fertility services. *Journal of Gender, Race and Justice* 2005;**9**;509-547.
- Crosignani, PG. Looking to Europe: something's changed in Italy. *Human Fertility* 2005;**8**;71.
- Deech R. Reproductive tourism in Europe: infertility and human rights. *Global Governance* 2003;**9**;425-432.
- Dickens B and Cook R. Ethical and legal issues in assisted reproductive technology. *Int J Gyn & Obs* 1999;**66**;55-61.
- ESHRE Task Force on Ethics and the Law. Cross-border reproductive care. *Human Reproduction* 2008;**23**;2182-84.

References

- Fenton R. Catholic doctrine versus women's rights: the new Italian law on assisted reproduction. *Med Law Rev* 2006;**14**;73-107.
- Ferraretti AP, Pennings G, Gianaroli L, Natali F and Magli MC. Cross-border reproductive care: a phenomenon expressing the controversial aspects of reproductive technologies. *Reprod Biomed Online* 2010;**20**,261-266.
- Hanafin P. *Conceiving life: reproductive politics and the law in contemporary Italy*. 2007. Ashgate, London.
- Inhorn, Marcia C., and Pasquale Patrizio. 2009. "Rethinking 'Reproductive Tourism' as 'Reproductive Exile.'" *Fertility and Sterility* (in press).
- Nielsen L. Legal consensus and divergence in Europe in the area of assisted conception—room for harmonisation? In Evans D (ed) *Creating the child*. 1996. Martinus Nijhoff Publishers, The Hague, pp.305–324.
- Nygren, K, Adamson D, Zegers-Hochschild F and de Mouzon J. Cross-border fertility care—International Committee Monitoring Assisted Reproductive Technologies global survey: 2006 data and estimates. *Fertility and Sterility* 2010 (in press).

References

- Mainland L and Wilson E. Principles of establishment of the First International Forum on Cross-Border Reproductive Care. *Fertility and Sterility* 2010 (in press).
- Matorras R. Reproductive exile versus reproductive tourism. *Hum Reprod* 2005;**20**;3571.
- McKelvey A, David AL, Shenfield F and Jauniaux ER. The impact of cross-border reproductive care or 'fertility tourism' on NHS maternity services. *BJOG* 2009;**116**;1520-1523.
- Merlet F and S n maud B. Prise en charge du don d'ovocytes: r glementation du don, la face cach e du tourisme procr atif. *Gyn Obs Fert* 2010;**38**;36-44.
- Pennings G. Legal harmonization and reproductive tourism in Europe. *Hum Reprod* 2004;**19**;2689-2694.
- Pennings G. Reproductive tourism as moral pluralism in motion. *J Med Ethics* 2002;**28**;337–341.

References

- Pennings G. International parenthood via procreative tourism. In Shenfield F and Sureau C (eds) *Contemporary ethical dilemmas in assisted reproduction*. 2006. Informa Health Care: Abingdon, UK, pp. 43-56.
- Pennings G. Cross-border reproductive care in Belgium. *Hum Reprod* 2009;**24**:3108-3118.
- Pennings G. International evolution of legislation and guidelines in medically assisted reproduction. *Reproductive Biomedicine Online* 2009;**18**:15-18.
- Robertson JA. Protecting embryos and burdening women: assisted reproduction in Italy. *Hum Reprod* 2004;**19**:1693-1696.
- Storrow R. Quests for conception: fertility tourists, globalization and feminist legal theory. *Hastings Law J* 2005;**57**:295-330.
- Storrow R. Medical conscience and the policing of parenthood. *William & Mary J of Women and the Law* 2010;**16**:369-393.
- Turone F. Italians are forced to go abroad for assisted reproduction. *British Medical Journal* 2006;**333**:1192.

How changes in Italian legislation have influenced medical practices?

Filippo Maria Ubaldi M.D. M.Sc.

Law 40/2004 "Norms on the matter of medically assisted procreation"

Art.14 Limitations to the applicability of techniques on embryos

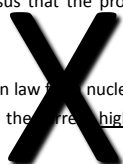
- 1. Embryo cryopreservation and suppression are forbidden; however the provisions of the law 198/1978 stand valid
- 2. Techniques of embryo production must not create a number of embryos exceeding that strictly necessary to a unique and contemporary transfer, at any rate, never to exceed three.
- 4. Embryo reduction is forbidden
- 8. It is permitted to cryoconserve male and female gametes

9. Violation of one of the prohibitions or obligations spelled out in the preceding paragraphs is punished with a jail term of up to 3 years, a fine of between 50 and 150.000 euros and suspension from exercising the profession

What is an embryo?

There is a general consensus that the pronuclear stage can not be considered as an embryo.

The application of the Italian law from nuclear singamy stage onwards could still preserve enough the current high standard and efficacy of infertility treatments.



Materials and Methods I

Seven Italian infertility centres were invited to collect data on IVF cycles performed over the first 4 months of application of the new legislation

As a control all centres provided data on cycles performed in the same solar period 1 year before

All participating centres had been engaged for >5 y. in the field of IVF and none of them had modified their organization over the last 2 years.

Data were provided anonymously by the participating centres

Materials and Methods II

The following items were requested:

- | | |
|-------------------------------|------------------------|
| - Age | - Sperm concentration |
| - Body Mass Index | - # oocytes retrieved |
| - Duration of infertility | - # oocytes used |
| - Previous pregnancies | - # embryos obtained |
| - Previous IVF cycles | - # emb. transferred |
| - Indication | - Clin. pregnancy rate |
| - Total IU of FSH | - Implantation rate |
| - Duration of stimulation | - Cumulative preg.rate |
| - Type of ART (IVF ICSI TESE) | - Severe OHSS rate |

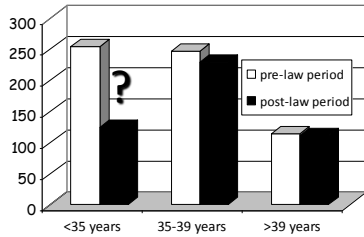
χ^2 -test, χ^2 -test for trend, Fisher's exact test, non-parametric Wilcoxon test were used as appropriate

Results

Characteristics of cycles according to the study period: clinical data

	Pre-law period	Post-law period	P
N° cycles	961	900	
Female age (\pm SD)	34.9 \pm 4.4	35.3 \pm 4.6	0.06
Body Mass Index	22.2 \pm 3.1	22.4 \pm 4.4	NS
Duration of infertility	4.6 \pm 2.6	4.7 \pm 3.8	NS
Previous IVF - ICSI cycles			NS
0	323 (47.5)	273 (40.8)	
1	175 (25.7)	196 (29.3)	
2	105 (15.4)	116 (17.2)	
≥ 3	77 (11.3)	84 (12.6)	
Indication for IVF - ICSI			NS
Tubal - endometriosis	204 (21.2)	200 (22.4)	
Male or mixed factor	633 (65.9)	569 (63.8)	
Unknown factor	119 (12.4)	123 (13.8)	

Distribution of the stimulated cycles: female age (European Hospital)



Results

Characteristics of cycles: stimulation protocols

	Pre-law period	Post-law period	P
Protocol of stimulation			<0.001
Long protocol	588 (81.7)	612 (68.3)	
FSH + GnRH antagonist	115 (16.0)	256 (28.5)	
Other	17 (2.3)	29 (3.2)	
Type of FSH			1.00
Recombinant	714 (99.0)	888 (99.1)	
Urinary	7 (1.0)	8 (0.9)	
Total IU of FSH used	3207 ± 1669	2987 ± 1552	0.007
Duration of stimulation (days)	11.6 ± 2.4	11.4 ± 2.4	0.06

Results

Characteristics of cycles: biological data

	Pre-law period	Post-law period	P
Assisted reproduction technique			<0.001
IVF	202 (21.1)	96 (10.7)	
ICSI	729 (76.3)	787 (87.7)	
MESA – TESA	25 (2.6)	14 (1.6)	
Sperm concentration (x10 /ml)	20 (5-40)	20 (5-45)	0.36
No. of retrieved oocytes	9.3 ± 5.7	7.0 ± 4.1	<0.001
No. of MII oocytes	7.4 ± 4.7	5.4 ± 3.5	<0.001
No. of MII oocytes injected	7.4 ± 4.7	2.6 ± 0.8	<0.001
Fertilization rate (%)			
IVF	62.7	76.4	<0.001
ICSI	65.6	78.6	<0.001

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Results

Characteristics of cycles: clinical outcome

	Pre-law period	Post-law period	P
No. of transfer not performed	113 (13.8)	99 (11.0)	0.6
No. of embryos transferred			<0.001
1	111 (13.1)	171 (21.3)	
2	339 (40.0)	306 (38.2)	
3	299 (35.3)	324 (40.5)	
≥4	99 (11.6)	0 (0.0)	
Clinical pregnancy rate/OPU	259 (27.0)	218 (24.2)	0.18
Clinical pregnancy rate/ET	259 (30.5)	218 (27.2)	0.14
Implantation rate	340 (16.2)	270 (15.4)	0.48
Severe OHSS (with hospitalization)	5 (0.5)	4 (0.4)	1.00

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Results

Incidence of extrauterine and multiple pregnancy

	Pre-law period	Post-law period	P
Extrauterine pregnancies	5 (1.9)	3 (1.4)	0.73
Intrauterine pregnancies			0.11
Singletons	188 (72.6)????	171 (79.2)	
Twins	54 (20.8)	39 (18.1)	
Triplets	13 (5.0)	6 (2.8)	

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Results

Impact of the prohibition of embryo freezing

	Pre-law period No./total %	Post-law period No./total %	P
Cycles with embryo/oocyte freezing	193/576 33.5	57/505 11.3	<0.001
Patients who have used frozen e/o	110/193 57.0	18/57 31.6	0.001
PR using frozen embryos or oocytes	33/110 30.0	4/18 22.2	0.59
PR using fresh embryos	161/576 28.0	129/505 25.5	0.41
Cumulative PR (fresh+frozen)	194/576 33.7	133/505 26.3	0.009

Data from 4 centres (Bologna, Palermo I and II, Rome) which froze embryos in the pre-law period and froze oocytes in the post-law period

Conclusions I

First four months of law application:

After fresh ET → overall absolute reduction of 3% of pregnancy rate with a relative decrease of 10%, not statistically different. If we consider that in Italy could likely born 3000 children a year after ART, because of the law will born 300 children less.

Cumulative pregnancy rate was significantly lower with an absolute reduction of 7% and a relative decrease of 21% → 630 children less every year per oocyte retrieval.

Conclusions II

Significant increase of the mean female age (very likely young women with better prognosis prefer not to undergo IVF in Italy)

Significant increase GnRH antagonist + FSH protocols, significant decrease of the total amount of FSH used and of the number of days of stimulation but comparable OHSS rate

Significant increase of ICSI: oocyte denudation allows a better possibility to select the oocyte (nuclear maturity, characteristics of the zona pellucida, of the cytoplasm, the presence and the location of the meiotic spindle...)

After 10 March 2004

Use of 3 oocytes

Mean number of embryos/cycle: 1,8

No embryo selection

No embryo cryopreservation

How to improve pregnancy rates/OPU?

Gamete selection

Oocyte freezing

Sperm selection

Sperm morphology and ICSI

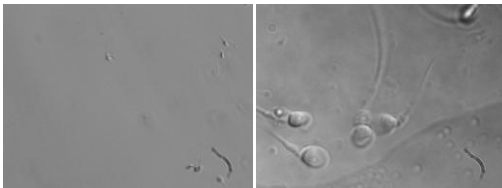
Letter to *New England Journal of Medicine*:

"Selection of spermatozoa with normal nuclei to improve the pregnancy rate with intracytoplasmic sperm injection"

Benjamin Bartoov et al. (2001)

IMSI (intracytoplasmic morphologically selected sperm injection) is a new method based on motile sperm organellar morphology examination (MSOME) performed with an inverted light microscope equipped with high-power nomarski optics (1000x) enhanced by digital imaging to achieve a magnification of 6600x.

Sperm morphology and ICSI



400X

6600X

IMSI: sperm assessment

Motile Sperm Organellar Morphology Examination CRITERIA for SPERMATOOZA SUITABLE for IMSI

The MSOME criteria for the morphological normalcy of the sperm nucleus were defined as below:

- SMOOTH
- SYMMETRIC
- OVAL CONFIGURATION
- HOMOGENEITY OF THE NUCLEAR CHROMATIN MASS (no more than one vacuole / less than 4% of the nuclear area)

The average lenght and width limits in 100 spermatozoa with a normally looking nucleus, are estimated as follow:

- LENGHT: $4.75 \pm 0.28 \mu\text{m}$
- WIDTH: $3.28 \pm 0.20 \mu\text{m}$

Bartoov et al., 2003

IMSI: results

Some studies have recently analysed the impact of IVF-IMSI procedure on ICSI outcome in terms of: fertilization rate, embryo development, pregnancy rate, implantation rate and abortion rate.

Does it work?

No large prospective randomized trials available

Sperm binding assay

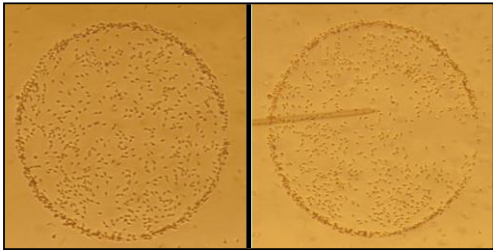
HYPOTHESIS

- Mature spermatozoa may selectively bind to HA.
- Diminished sperm maturity (failure of spermatogenetic membrane remodeling) may be related to increased levels of chromosomal aberrations.
- Solid-state HA binding would facilitate the selection of individual mature sperm with low levels of chromosomal aneuploidies.

Jakab et al., 2005

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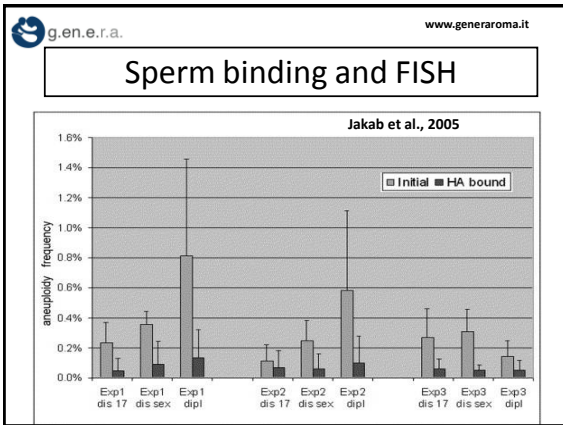
Sperm binding and ICSI



Washed sperm placed near solid HA spot bonded to Petri dish (Biocat) in HTF

incubation, room temp., 10 min

Collect bound sperm with ICSI micropipette



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Sperm binding and ICSI

Study on sibling oocytes (n=291), 20 unselected couples

	ICSI N=145	PICSI N=146
Fertilization rate	66.9%	72.9%
Oocyte degeneration rate	13.8%	9.0%
Top quality embryos	NS	NS

Janssens et al., 2006

Oocyte selection

Oocyte nuclear status

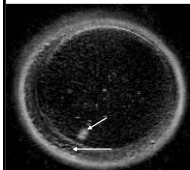


- ✓ About 80% of the obtained oocytes after ovarian hyperstimulation is at Metaphase II stage
- ✓ Metaphase I oocytes and Germinal Vesicle oocytes may be matured in vitro
- ✓ Low fertilization, and cleavage rates are reported with in vitro matured oocytes. Higher rates of aneuploidy have been described in the deriving embryos

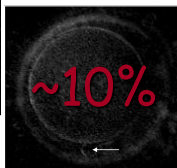
Oocyte nuclear status

SPINDLE VIEW

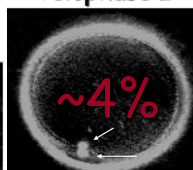
Metaphase II



???



Telophase I



Oocyte morphology and outcome

OOCYTE ABNORMALITIES	PREDICTIVE	NOT PREDICTIVE
Extracytoplasmic evaluation		
Fragmented/Abnormal I Polar Body	Ebner et al. 2000 Xia, 1997	Verlinsky et al., 2003 Ciotti et al., 2004
Abnormal Zona Pellucida	Loutradis et al. 1998	De Sutter et al., 1996
Large Perivitelline Space	Xia, 1997	De Sutter et al., 1996
Abnormal shape	Loutradis et al., 1998	De Sutter et al., 1996
Cytoplasmic evaluation		
Granular cytoplasm	Serhal et al, 1997	Balaban et al., 1998
Centrally located granular area	...	Kahraman et al. 2000
Vacuols	Ebner et al., 2005	...
Smooth endoplasmic reticulum clusters	Van Blerkom et al.,	...
Refractile body	Serhal et al, 1997 Alihani et al., 1995	Balaban et al., 1998

Oocyte morphology and ICSI outcome

Aim:

- To evaluate the influence of specific morphologic features on ICSI outcome
- To identify oocyte quality markers
- To evaluate the influence of clinical parameters on oocyte quality

Significance of metaphase II human oocyte morphology on ICSI outcome

Laura Rienzi, B.Sc., Filippo Mari Ubaldi, M.D., Marcello Iacobelli, B.Sc., Maria Giulia Minasi, B.Sc., Stefania Romano, R.Sc., Susanna Ferrero, M.D., Fabio Sapienza, M.D., Elena Boroni, M.D., Katarzyna Litwicka, M.D., and Ermanno Greco, M.D.

1692 Fertility and Sterility® Vol. 90, No. 5, November 2008 0015-0282/08/\$34.00 Copyright © 2008 American Society for Reproductive Medicine, Published by Elsevier Inc. doi:10.1016/j.fertnstert.2007.09.024

Study design

Inclusion criteria:

- ✓ Retrospective study
- ✓ 516 consecutive ICSI cycles
- ✓ No severe male factor infertility
- ✓ All stimulation protocols, all age

Oocyte selection:

- ✓ Only MII (with detectable MS)
- ✓ Random (low magnification, 1191 oocytes)

Evaluation of all morphological oocyte characteristics

cytoplasm granularity, vacuols, SER, CLGC, PB, ZP, PVS

Record keeping of oocyte and embryo development

PN and embryo score according to Rienzi et al., 2002

MOMS and clinical outcome

TABLE 5

Relationship between metaphase II oocyte morphological score (MOMS), cumulative embryo score on day 2 (Embryos) and clinical outcome.

	MOMS			Embryos		
	Mean (SD)	Odds ratio (95% CI)	P value	Mean (SD)	Odds ratio (95% CI)	P value
Positive hCG	1.1 (1.2)	0.90 (0.82-0.99)	.040	1.9 (1.7)	0.87 (0.80-0.93)	<.001
Clinical pregnancy	1.1 (1.2)	0.90 (0.81-1.00)	.050	1.8 (1.6)	0.83 (0.77-0.90)	<.001
Deliveries	1.1 (1.2)	0.90 (0.81-1.00)	.054	1.8 (1.7)	0.84 (0.77-0.91)	<.001

Wenzl. Oocyte morphology and IVF outcome. Fertil Steril 2008.

Rienzi et al., 2008

Oocyte cryopreservation

“No need”?

Oocyte cryopreservation

- No need?**
- Logistic reasons*
 - Sperm collection problem*
 - Legal reasons*
 - Restrictions in embryo cryopreservation*
 - Fate of embryos of separated couples*
 - Social reasons*
 - Wish to delay motherhood*
 - Moral reasons*

Oocyte cryopreservation

No need?

Oocyte donation

Oocyte banks may result in

- widespread availability
- shortened, eliminated waiting list
- safety (quarantine)
- choice

Oocyte cryopreservation

No need?

How many women are deprived of their maternity
 each day all over the world because some
 fertility experts consider
 "... *there is no need...*"?

Traditional freezing and/or vitrification?

Efficiency in donation program not compromised
(Cobo et al., 2007; Nagy et al., 2007)

Prospective randomized study with own oocytes
 no difference *(Rienzi et al., 2010)*

The clinical pregnancy rate has doubled with the
 introduction of vitrification *(Tulandi, 2008)*

Cumulative ongoing pregnancy rate with oocyte
 vitrification without embryo selection in a
 standard infertility program *(Ubaldi, 2010)*

Traditional freezing and vitrification

1. Laboratory outcomes
2. Clinical outcomes

Lab outcomes: vitrification, infertile population

human reproduction

ORIGINAL ARTICLE *Embryology*

Embryo development of fresh 'versus' vitrified metaphase II oocytes after ICSI: a prospective randomized sibling-oocyte study

Laura Rienzi¹, Stefania Romano, Laura Albricci, Roberta Maggiulli, Antonio Capalbo, Elena Baroni, Silvia Colamaria, Fabio Sapienza, and Filippo Ubaldi

GENERA, Centre for Reproductive Medicine, Clinica Valle Giulia, via de Notaris 28, Rome, Italy

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Study design

In order to validate the effectiveness of a vitrification approach for oocyte cryopreservation a prospective comparison was designed in our population of infertile patients (september 08 - march 09).

This study was set-up as a non-inferiority trial with a prospective target of 240 sibling metaphase II oocytes obtained from an estimated 40 ICSI patients

Oocyte fertilization rates after ICSI (per warmed oocyte and per injected oocyte) were evaluated as primary outcomes. Secondary outcomes were pronuclear morphology and embryo development

Patient population

Table I Patient's baseline characteristics and fresh cycle parameters

	Patients included (N = 40)
Female age (mean years ± SD)	35.5 ± 4.8
Baseline FSH (mean mIU/ml ± SD)	6.44 ± 3.1
Previous IVF attempts (mean ± SD)	0.58 ± 1.0
GnRH-agonist long protocol (%)	31/40 (77.5)
Antagonist protocol (%)	9/40 (22.5)
Days of stimulation (mean ± SD)	10.8 ± 1.95
Total gonadotrophin amount IU (mean ± SD)	2201.65 ± 765.7
Number of CCOCs retrieved (mean ± SD)	13.3 ± 4.5
Number of MI oocytes (mean ± SD)	10.7 ± 3.6
Number of MI oocytes vitrified (mean ± SD)	6.3 ± 2.8

CCOC, cumulus corona oocyte complex; MI, metaphase II.

Laboratory outcomes

Table III Primary and secondary outcomes measures: fertilization, pronuclear morphology, embryo development and embryo morphology of fresh and vitrified sibling oocytes

	Fresh ICSI	Verified/Warmed ICSI (%)	Absolute difference (%) (95% CI)	OR (95% CI)	P
Fertilization (2PN) per sibling oocyte	100/120 (83.3) ^a	95/124 (76.6) ^a	-6.73 (-16.6 to 3.39)	0.65 (0.33 to 1.29)	0.20
Fertilization (2PN) per injected oocyte	100/120 (83.3) ^a	95/120 (79.2) ^a	-4.17 (-14.0 to 5.7)	0.76 (0.37 to 1.53)	0.50
Normal 2PN morphology	96/100 (96.0) ^b	86/95 (90.5) ^c	-5.47 (-13.4 to 1.84)	0.39 (0.08 to 1.49)	0.16
IPN oocytes	3/120 (2.5) ^b	6/120 (5.0) ^b	2.5 (-2.82 to 8.22)	2.05 (0.42 to 12.9)	0.50
3PN	1/120 (0.83) ^b	2/120 (1.66) ^b	0.83 (-3.09 to 5.1)	2.01 (0.10 to 119.9)	1
Degenerated oocytes post-ICSI	1/120 (0.83) ^b	4/120 (3.34) ^b	2.51 (-1.75 to 7.47)	4.08 (0.39 to 203.5)	0.37
Day 2 embryo development	100/100 (100) ^d	93/95 (97.9) ^d	-2.11 (-7.3 to 1.9)	0.0 (0.00 to 0.23)	0.24
Excellent quality embryos	52/100 (52.0) ^d	49/95 (51.6) ^d	-0.43 (-14.2 to 13.3)	0.98 (0.53 to 1.79)	0.90
Good quality embryos	38/100 (38.0) ^d	41/95 (43.2) ^d	5.16 (-8.49 to 18.6)	1.24 (0.67 to 2.28)	0.47
Fair/poor quality embryos	10/100 (10.0) ^d	3/95 (3.16) ^d	-6.84 (-14.6 to 0.42)	0.29 (0.05 to 1.19)	0.10

^aPercentages, expressed per warmed oocyte.

^bPercentages, expressed per inseminated oocyte.

^cPercentages, expressed per 2PN fertilized oocyte.

^dPercentages, expressed per derived oocyte.

Laboratory outcomes: oocyte donation

Comparison of concomitant outcome achieved with fresh and cryopreserved donor oocytes vitrified by the Cryotop method

Ana Cobo, Ph.D.,^a Masashige Kawayama, Ph.D.,^b Sonia Pérez, Ph.D.,^a Amparo Ruiz, M.D.,^a Antonio Pellicer, M.D.,^a and José Remohi, M.D.^a

^aIVI Universidad de Valencia, Valencia, Spain; and ^bKato Ladies Clinic, Nishijinjuku, Shinjuku, Tokyo, Japan

Embryo quality.	Vitrified	Fresh	P value
Cleavage rate day 2 embryos (%)	161/171 (94.2)	176/180 (97.8)	.083
No. of cell day 2 embryos (mean ± SD)	3.8 ± 1.1	3.9 ± 1.5	.567
Good quality day 2 embryos (%)	138/161 (84.4)	128/178 (71.5)	.005
Cleavage rate day 3 embryos (%)	125/161 (77.6)	149/176 (84.6)	.098
No. of cell day 3 embryos (mean ± SD)	6.9 ± 2.3	6.9 ± 2.7	.558
Good quality day 3 embryos (%)	101/125 (80.8)	120/149 (80.5)	.956
No. of embryo undergoing extended culture	78	143	
Blastocyst rate No. (%)	38/78 (48.7)	68/143 (47.5)	.869
Good quality blastocysts No. (%)	24/32 (81.1)	42/60 (70)	.612

Traditional freezing and vitrification

1. Laboratory outcomes
2. Clinical outcomes

Clinical outcome: slow freezing, infertile population

Evidence-based clinical outcome of oocyte slow cooling



Since 1982, Dr Bionzi has been Clinical Director of the Assisted Reproduction Centre "Scirocco Procreazione", Bologna, Italy, and of a number of associated IVF clinics. After graduating in Medicine and Surgery at the University of Bologna, Bologna, Italy, in 1986, he completed his residency in Obstetrics and Gynecology at the University of Bologna in 1991. He then attended the University of California Irvine, Irvine, California, as Research Fellow from October 1991 to May 1991. His research areas are embryo-implantation, oocyte freezing and multiple induction of ovulation. Dr Bionzi has published more than 160 research papers and acts as Chairman of CECSO (ITALY).

Table 2. Pregnancy outcome using frozen-thawed oocytes.

No. patients with at least one thawing cycle	510
No. of thawing cycles	660
No. of oocytes	
Frozen	5448
Thawed	3238
Survived (%)	2205 (68.1)
Microinjected	1815
Two pronucleate (%)	1381 (76.1)
No. of embryos cleared (%)	1208 (91.8)
No. of embryos transferred (%)	1208 (100)
No. of transfers	590
No. of pregnancies	88
Gestational sacs	103
Implantation rate (%)	8.1
Pregnancy rate (%) per patient	17.2 (88/510)
Pregnancy rate (%) per transfer	14.9 (88/590)
Abortions (n)	19
Abortion rate (%)	21.6

Table 3. Cumulative pregnancy rate derived from fresh and frozen-thawed oocytes.

No. of patients	749
No. of pregnancies	355
No. of gestational sacs	458
Cumulative pregnancy rate (%) per transfer	47.4 (355/749)
Cumulative implantation rate (%)	15.5 (458/2947)

Clinical outcome: vitrification

Hum. Reprod. Advance Access published February 25, 2010

Human Reproduction, Vol.00, No.0 pp. 1-7, 2010
doi:10.1093/humrep/ded046

human reproduction ORIGINAL ARTICLE *Infertility*

Cumulative ongoing pregnancy rate achieved with oocyte vitrification and cleavage stage transfer without embryo selection in a standard infertility program

Filippo Ubaldi¹, Reno Anniballo², Stefania Romano¹, Elena Baroni¹, Laura Albricci¹, Silvia Colamaria¹, Antonio Capalbo¹, Fabio Sapienza¹, Gábor Vajta², and Laura Rienzi^{1,2}

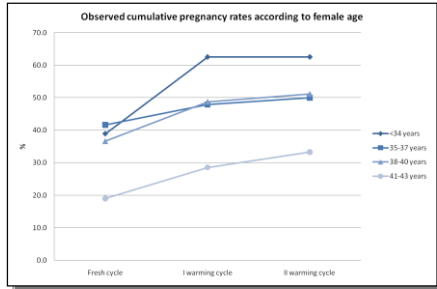
Clinical results

Cumulative ongoing pregnancy rates after fresh cycle, I warming and II warming cycles according to female age

	Overall	≤34 years	35-37 years	38-40 years	41-43 years
Fresh cycle	68182 (37.4%)	2972 (40.3%)	2048 (41.7%)	1541 (36.6%)	421 (19.0%)
(95% CI)	(31.2 to 45.1)	(29.7 to 51.9)	(28.8 to 55.8)	(23.6 to 52.0)	(7.8 to 40.3)
I warming cycle	94182 (51.6%)	4572 (62.5%)	2348 (47.9%)	2041 (48.8%)	621(28.6%)
(95% CI)	(44.4 to 58.8)	(50.9 to 72.8)	(34.4 to 61.7)	(34.2 to 63.6)	(13.9 to 50.2)
II warming cycle	97182 (53.3%)	4572 (62.5%)*	2448 (50.0%)	2141 (51.2%)	721 (33.3%)*
(95% CI)	(40.0 to 60.0)	(50.9 to 72.8)	(36.3 to 63.6)	(36.4 to 65.8)	(17.2 to 54.9)

data are expressed as absolute, percentage frequency and 95% confidence interval (95% CI)
*P=0,006, Kaplan-Meier Test

Results



Results

Effect of patients and cycle characteristics on cumulative ongoing pregnancy rates based on Cox regression analysis

Covariate	P-value	OR	(95% CI)
Female age groups			
≤34 years (reference)	-	-	-
34-37 years	0,36	0,78	0,47 to 1,31
38-40 years	0,36	0,77	0,45 to 1,33
41-43 years	0,04	0,44	0,18 to 0,64
Infertility factors			
male (reference)	-	-	-
idiopathic	0,75	0,90	0,48 to 1,67
endometriosis	0,19	0,38	0,09 to 1,60
ovulatory	0,54	0,53	0,07 to 3,91
tubal	0,81	0,93	0,52 to 1,65
combined	0,25	1,56	0,73 to 3,32
Basal FSH	0,60	0,82	0,82 to 1,23
Number of COC	0,85	1,01	0,92 to 1,09
Number of MII oocytes	0,57	1,03	0,92 to 1,14
Incubation time prior to ICSI vitrification	0,77	1,02	0,88 to 1,17
Stimulation protocol	0,41	0,79	0,45 to 1,37
Sperm quality	0,84	1,07	0,56 to 2,03

odds ratio (OR), 95% confidence interval (95% CI)

Conclusions cumulative pregnancy

- High cumulative ongoing pregnancy rates were achieved in a standard infertility program with transfers of embryos derived from fresh and subsequently vitrified eggs
- Among various infertility factors, only female age influenced significantly the outcome
- The overall efficiency justifies the application of this strategy in routine infertility work

Obstetric outcomes

Chian RC, Huang JY, Tan SL, Lucena E, Saa A, Rojas A, Castellón LA, García Amador MI, Montoya Sarmiento JE.
 Obstetric and perinatal outcome in 200 infants conceived from vitrified oocytes. *Reprod Biomed online* 2008

Noyes N, Porcu E, Borini A.
 Over 900 oocyte cryopreservation babies born with no apparent increase in congenital anomalies.16:*Reprod Biomed online* 2009 608-10

European Society of Human Reproduction and Embryology and Societa' italiana di studi di Medicina della Riproduzione

- Each year about 10,000 Italian couples go abroad to undergo an assisted fertilization program.
- One of three who go to a foreign country to have a child is an Italian couple

**CORTE COSTITUZIONALE
SENTENZA N. 151
1 APRILE ANNO 2009**

SUPREME COURT

dichiara l'illegittimità costituzionale dell'art. 14, comma 2, della legge 19 febbraio 2004, n. 40 (Norme in materia di procreazione medicalmente assistita), limitatamente alle parole «ad un unico e contemporaneo impianto, comunque non superiore a tre»;

dichiara l'illegittimità costituzionale dell'art. 14, comma 3, della legge n. 40 del 2004 nella parte in cui non prevede che il trasferimento degli embrioni, da realizzare non appena possibile, come stabilisce tale norma, debba essere effettuato senza pregiudizio della salute della donna;

dichiara manifestamente inammissibile la questione di legittimità costituzionale dell'art. 14, comma 1, della legge n. 40 del 2004 ART. 14. (È vietata la crioconservazione e la soppressione di embrioni), sollevata, in riferimento agli artt. 3 e 32, primo e secondo comma, della Costituzione, dal Tribunale ordinario di Firenze, con ordinanza r.o. n. 323 del 2008;

**SUPREME COURT
SENTENCE N. 151
1 APRIL 2009**

The sentence establishes two important principles:

"Physician autonomy and responsibility" in determining the appropriate number of embryos to transfer,"minimizing the risk to women and fetus' health"

"the possibility to freeze those embryos produced but not transferred for medical choice" (affected post-PGD)

RESULTS

	LAW PERIOD (01/08-05/09)	POST SUPREME COURT PERIOD (06/09-01/10)
N° CYCLES	720	405
FEMALE AGE (mean±SD)	37,3 ± 4.2	38,3 ± 3.7 P<0,05
OOCYTE MII	6,1 ± 3.9	6,3 ± 4.2
INJECTED OOCYTE	2,7 ± 0.6	4,3 ± 2.1 P<0,05
FERTILIZED OOCYTE	2,3 ± 0.8	3,6 ± 1.8 P<0,05
EMBRYO TRANSFER	2,2 ± 0.9	2,2 ± 1.1

RESULTS

	LAW-PERIOD (01/08-05/09)	POST-SUPREME COURT (06/09-01/10)
POSITIVE β-HCG (RATE)	37,23 (268/720)	35,30 (143/405)
CLINICAL PREGNANCY	32,23 (232/720)	32,34 (131/405)
BIOCHEMICAL PREGNANCY	13,43 (36/268)	8,39 (12/143)
MISCARRIAGE	22,41 (52/232)	17,5 (23/131)
SINGLETON PREGNANCY	65,9 (153/232)	69,5 (90/131)
TWIN PREGNANCY	30,2 (70/232)	27,5 (36/131)
TRIPLET PREGNANCY	2,6 (6/232)	1,5 (2/131)
ECTOPIC PREGNANCY	1,3 (3/232)	1,5 (2/131)

**IMPLICATIONS OF ITALIAN LEGISLATION FOR
LABORATORY PRACTICE**

M.C. Magli, M.Sc.

S.I.S.ME.R. Reproductive Medicine Unit - Via Mazzini, 12 - 40138 Bologna Italy

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LEARNING OBJECTIVES

At the conclusion of this presentation participants should be able to:

- 1) Describe to which extent the change(s) in the Italian legislation affected the laboratory activities.
- 2) List the techniques and strategies that had to be drastically modified and the consequences of this actions.
- 3) Formulate the points of reaction that produced positive results from a negative situation.

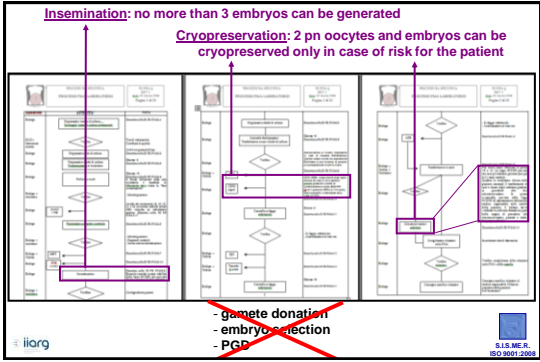
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**1ST PHASE
IMPLEMENTATION**

- Revision of protocols and standard operative procedures

Benagiano and Gianaroli 2004; 2010

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1ST PHASE IMPLEMENTATION

- Revision of protocols and standard operative procedures
- Cancellation of gamete donation's programs

Oocyte donation ~~+~~ Infertile patients

Sperm donation

Donor sperm samples removed from the storage tank

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1ST PHASE IMPLEMENTATION

- Revision of protocols and standard operative procedures
- Cancellation of gamete donation's programs
- Information to all members of the laboratory staff
- Data collection for the national registry

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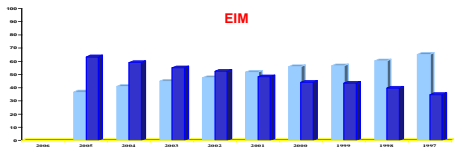
**2nd PHASE
APPLICATION**

- Extensive use of ICSI



Distribution IVF / ICSI (1997-2006)

EIM



ITALY

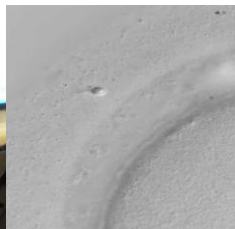
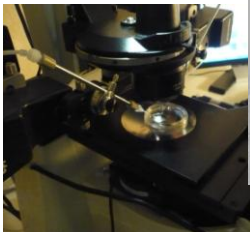


IVF ICSI



**2nd PHASE
APPLICATION**

- Extensive use of ICSI

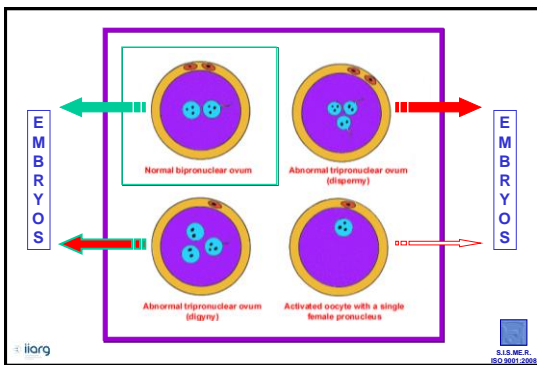


**2nd PHASE
APPLICATION**

- Extensive use of ICSI
- Transfer of all generated embryos

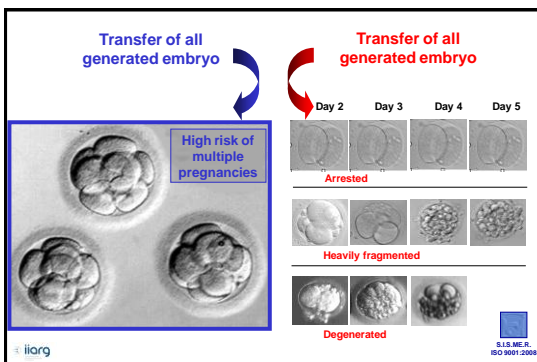
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**3rd PHASE
REACTION**

- Improve gamete selection



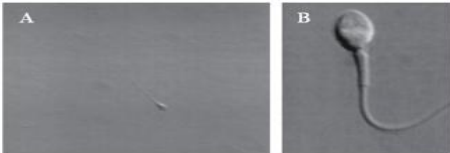
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**GAMETE SELECTION
SPERMATOZOA**

IMSSI

INTRACYTOPLASMIC MORPHOLOGICALLY SELECTED SPERM INJECTION
MOTILE SPERM ORGANELLE MORPHOLOGY EXAMINATION



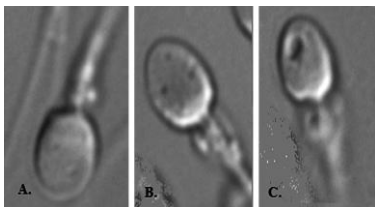
Examination performed in fresh samples
Inverted light microscope
Equipped with high-power Nomarski optics
Enhanced by digital imaging to achieve a magnification up to 6300

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**GAMETE SELECTION
SPERMATOZOA**

IMSSI



Peer et al. 2007 Fertil Steril 88, 1589-1594

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GAMETE SELECTION SPERMATOZOA

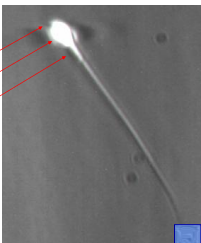
Sperm head's birefringence

Human spermatozoa possess characteristics of birefringence due to the anisotropy of their protoplasmic texture.

- mature acrosomal complex
- mature sperm nucleus
- midpiece

protein subacrosomal filaments - longitudinally oriented

nucleoprotein filaments - arranged in ls and longitudinally oriented

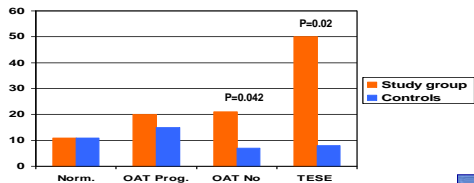


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GAMETE SELECTION SPERMATOZOA

Sperm head's birefringence:

Significantly higher ongoing-pregnancy rate after ICSI with birefringent spermatozoa



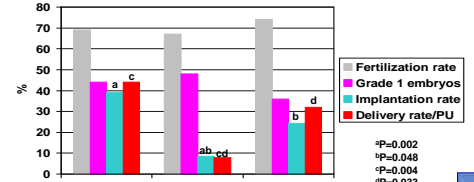
Category	Study group (%)	Controls (%)	P-value
Norm.	~10	~10	
OAT Prog. Mot.	~20	~15	
OAT No Prog. Mot.	~20	~8	P=0.042
TESE	~50	~8	P=0.02

liarg Gianaroli et al., 2008 S.I.S.M.E.R. ISO 9001:2008

GAMETE SELECTION SPERMATOZOA

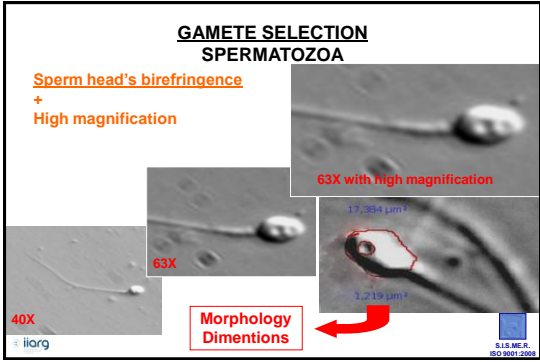
Sperm head's birefringence:

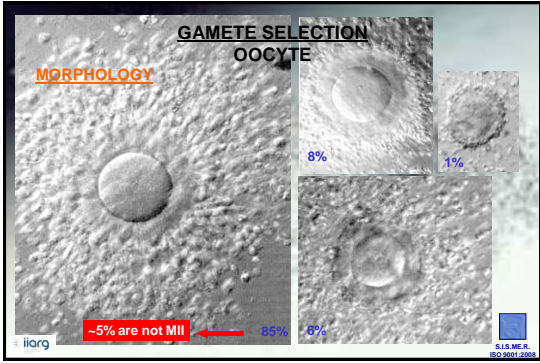
Significantly higher ongoing-pregnancy rate after ICSI with **reacted** spermatozoa

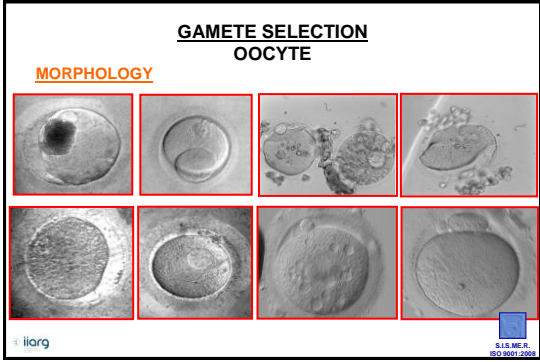


Group	Fertilization rate (%)	Grade 1 embryos (%)	Implantation rate (%)	Delivery rate/PU (%)
Reacted	~70	~45	~40	~45
Non-reacted	~65	~48	~10	~8
Mixed	~75	~35	~30	~25

liarg Gianaroli et al., 2010 S.I.S.M.E.R. ISO 9001:2008






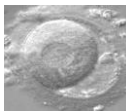


OOCYTE MORPHOLOGY

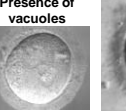
Enlarged perivitelline space




Presence of vacuoles



Hairy zona




Dark cytoplasm



Decreases by 83% good quality embryos (Ten et al., 2007)

Granular cytoplasm




50% aneuploid (Kahraman et al., 2000)

↓↓↓ **Implantation rate**

↑↑↑ **Abortion rate**

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GIANT OOCYTES

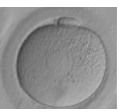


23 univalent (chromatid) chromosomes
↓
- Cytokinetic failure → Tetraploid GV
- Fusion of 2 GV

Frequency approximately 0.3%
Mean diameter 200 μm (vs. 155 μm)
Contribution to digynic triploidy

Balakier et al., 2002
Rosenbusch et al., 2002

AGGREGATION OF SER



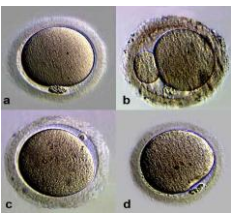
- 6.2 - 9.4% of cycles affected
- < 2% of oocytes affected (25% in pos cycles)

IR, PR	no difference
Biochemical pregnancies	58% vs 22% (P<0.01)
Take-home baby rate	42% vs 78% (P<0.001)
Increase in obstetric problems	33% vs. 5%
Lower birth weight	2500g vs. 3100g
Stillbirths	2/6 (one Beckwith-Wiedemann syndrome)

Ebner et al., 2008;
Otsuki et al., 2004

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GAMETE SELECTION OOCYTE



A. Normal MII
B. Large PB
C. Small PB
D. Fragmented PB

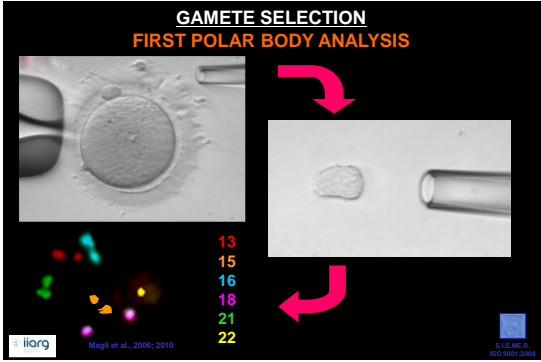
Courtesy: Lucinda Vereck Gordon, N.Y.

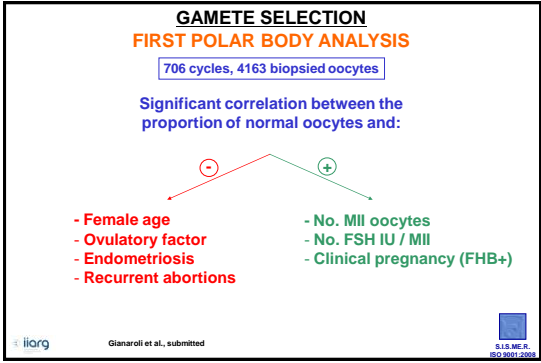
The presence of an enlarged PB was related to poorer rates of fertilization, cleavage, and top quality embryos but not fragmentation (Navarro et al., 2008)

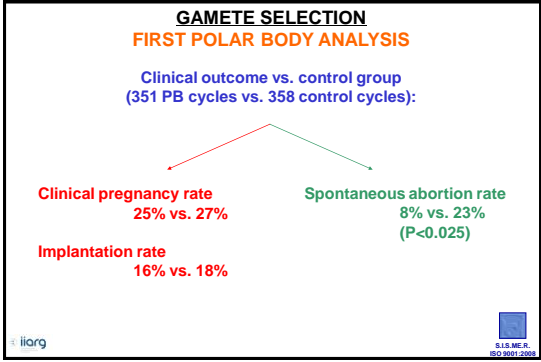
Fragmented polar body was associated with reduced blastocyst formation rate (Ebner et al., 2006; Balaban & Urman, 2006)-

Correlation to timing of PB1 formation??

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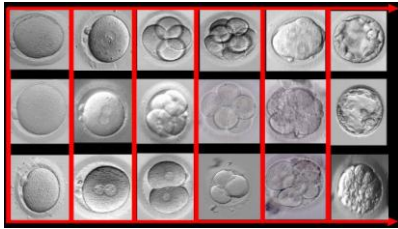
**3rd PHASE
REACTION**

- Improve gamete selection
- Extended embryo culture

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Extended embryo culture



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**3rd PHASE
REACTION**

- Improve gamete selection
- Extended embryo culture
- Oocyte cryopreservation

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Oocyte cryopreservation

Slow freezing	Vitrification
Protocols: 0.2M sucrose (Fabri et al., 2001) 0.3M sucrose (Bianchi et al., 2005) Physiology: Meiotic spindle (Rienzi et al., 2004) Osmotic toxicity (Coticchio et al., 2006) Oocyte ageing (Parmegiani et al., 2008) Embryo development (Magli et al., 2010)	Protocols OPS (Kuleshova et al., 1999) Cryotop (Kuwayama et al., 2005) Clinical outcome Spare oocyte (Antinori et al., 2007) Donor oocytes (Cobo et al., 2008) Fresh vs. vitrified (Rienzi et al., 2010)
	
Performance to be verified in infertile patients from all age categories	

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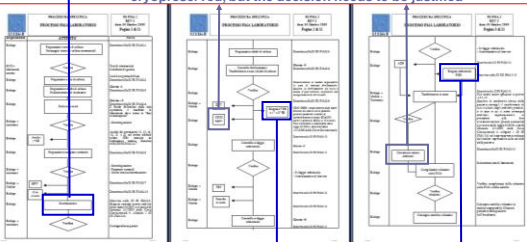
4th PHASE SENTENCE OF THE SUPREME COURT

- Revision of protocols and standard operative procedures
- Information to all members of the laboratory staff

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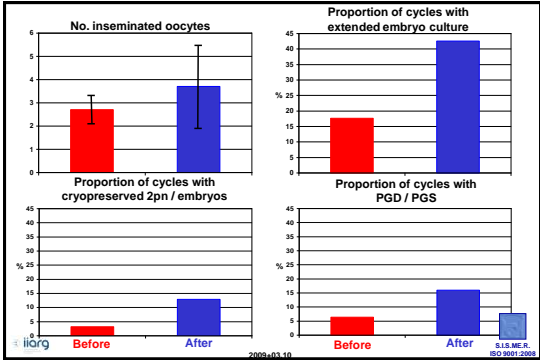
Insemination: the number of oocytes to be inseminated is established by the clinician according to the patient's characteristics

Cryopreservation: 2 pn oocytes and embryos can be cryopreserved, but the decision needs to be justified



PGD on PB1+PB2 / embryos

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CONCLUSIONS

- 1) The Italian legislation (March 2004) drastically affected the laboratory activities by regulating the number of embryos to be generated, and prohibiting embryo selection, cryopreservation, PGD, and the use of heterologous gametes.
- 2) Several techniques and strategies had to be modified leading to an increase in the use of ICSI and to the transfer of embryos that otherwise would have never been transferred.
- 3) There was a positive reaction to this situation that produced important results in the area of gamete selection and oocyte cryopreservation that are of great interest for the scientific community.

REFERENCES

- Antinori M, Licata E, Dani G, Cerusico F, Versaci C, Antinori S. Cryotop vitrification of human oocytes results in high survival rate and healthy deliveries. *Reprod Biomed Online* 2007;14:72-79.
- Balakier H, Bouman D, Sojicki A, Librach C, Squire JA. Morphological and cytogenetic analysis of human giant oocytes and giant embryos. *Hum Reprod* 2002;17:2394-2401.
- Barbov B, Berkovitz A, Eltes F, Kogosowski A, Yagoda A, Lederman H, Artzi S, Gross M, Barak Y. Pregnancy rates are higher with intracytoplasmic morphologically selected sperm injection than with conventional intracytoplasmic injection. *Fertil Steril* 2003;80:1413-1419.
- Benagiano G, Gianaroli L. The new Italian IVF legislation. *Reprod Biomed Online* 2004;9:117-125.
- Benagiano G, Gianaroli L. The Italian constitutional court modifies Italian legislation on assisted reproduction technology. *Reprod Biomed Online* 2010;3. In press.
- Bianchi V, Colicchio G, Distratis V, Di Giusto N, Flamigni C, Borini A. Differential sucrose concentration during dehydration (0.2 mol/l) and rehydration (0.3 mol/l) increases the implantation rate of frozen human oocytes. *Reprod Biomed Online* 2007;14:64-71.
- Cobo A, Kawayama M, Pe'ez S, Ruiz A, Pellicer A, Remohi J. Comparison of concomitant outcome achieved with fresh and cryopreserved donor oocytes vitrified by the Cryotop method. *Fertil Steril* 2008;89:1657-1664.
- Colicchio G, De Santis L, Rossi G, Borini A, Albertini D, Scaravelli G, Alecci C, Bianchi V, Nottola S, Ceccconi S. Sucrose concentration influences the rate of human oocytes with normal spindle and chromosome configurations after slow-cooling cryopreservation. *Hum Reprod* 2006;21:1771-1776.
- Ebner T, Moser M, Shebl O, Sommerguber M, Teus G. Prognosis of oocytes showing aggregation of smooth endoplasmic reticulum. *Reprod Biomed Online* 2008;16:113-118.
- Fabiani R, Porcu E, Marsella T, Rocchetta G, Venturoli S, Flamigni C. Human oocyte cryopreservation: new perspectives regarding oocyte survival. *Hum Reprod* 2001;16:411 - 416.
- Gianaroli L, Magli MC, Colodet G, Moretti E, Ferraretti AP, Bacetti B. Sperm head's birefringence: a new criterion for sperm selection. *Fertil Steril* 2008;90:104-112.

REFERENCES

- Gianaroli L, Magli MC, Ferraretti AP, Crippa A, Lappi M, Capitani S, Baccetti B. Birefringence characteristics in sperm heads allow for the selection of reacted spermatozoa for ICSI. *Fertil Steril* 2010;93:807-813.
- Huszar G, Ozkavukcu S, Jakab A, Celik-Ozenci C, Sati GL, Cayli S. Hyaluronic acid binding ability of human sperm reflects cellular maturity and fertilizing potential: selection of sperm for intracytoplasmic sperm injection. *Curr Opin Obstet Gynecol* 2006;18:260-267.
- Jakab A, Sakkas D, Delipiano E, Cayli S, Kovanci E, Ward D, Revelli A, Huszar G. Intracytoplasmic sperm injection: a novel selection method for sperm with normal frequency of chromosomal aneuploidies. *Fertil Steril* 2005;84:1665-673.
- Kuleshova L, Gianaroli L, Magli MC, Ferraretti AP, Trounson A.O. Birth following vitrification of a small number of human oocytes. *Hum Reprod* 1999;14:3077-3079.
- Kuwajima M, Vajta G, Kato O, Leibso SP. Highly efficient vitrification method for cryopreservation of human oocytes. *Reprod Biomed Online* 2005;11:300-308.
- Magli MC, Ferraretti AP, Crippa A, Lappi M, Feliciani E, Gianaroli L. First meiosis errors in immature oocytes generated by stimulated cycles. *Fertil Steril* 2006;86:629-635.
- Magli MC, Gianaroli L, Crippa A, Murni S, Robles F, Ferraretti AP. Aneuploidies of chromosomes 1, 4 and 6 are not compatible with human embryo implantation. *Fertil Steril* 2010. In press.
- Magli MC, Lappi M, Ferraretti AP, Capodi A, Ruberti A, Gianaroli L. The impact of oocyte cryopreservation on embryo development. *Fertil Steril* 2010;93:510-516.
- Nasr-Esfahani MH, Razavi S, Vahdati AA, Fathi F, Tavalaee M. Evaluation of sperm selection procedure based on hyaluronic acid binding ability on ICSI outcome. *J Assist Reprod Genet* 2008;25:197-203.
- Njoo Andersen A, Gossens V, Bhattacharya S, Ferraretti AP, Kupka MS, De Houston J, Nygren KG. The European IVF-monitoring (EIM) Consortium, for the European Society of Human Reproduction and Embryology (ESHRE). Assisted reproductive technology in Europe, 2005: results generated from European registers by ESHRE. *Hum Reprod* 2009;1:1-21.

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REFERENCES

- Otsuki J, Okada A, Morimoto K, Nagai Y, Kubo H. The relationship between pregnancy outcome and smooth endoplasmic reticulum clusters in III human oocytes. *Hum Reprod* 2004;19:1591-1597.
- Parmegiani L, Cognigni GE, Bernardi S, Ciampaglia W, Infante F, Pocognoli P, Tabarelli de Fatis C, Troilo E, Filicori M. Freezing within 2 h from oocyte retrieval increases the efficiency of human oocyte cryopreservation when using a slow freezing/rapid thawing protocol with high sucrose concentration. *Hum Reprod* 2006;23:1771-1777.
- Parmegiani L, Cognigni GE, Bernardi S, Troilo E, Ciampaglia W, Filicori M. "Physiologic-ICSI": Hyaluronic acid (HA) favors selection of spermatozoa without DNA fragmentation and with normal nucleus, resulting in improvement of embryo quality. *Fertil Steril* 2010;93:598-604.
- Peer S, Eltes F, Berkovitz A, Yitvitsa R, Jaykoon P, Bartov B. Is fine morphology of the human sperm nuclei affected by in vitro incubation at 37°C? *Fertil Steril* 2007;88:1589-1594.
- Rienzi L, Martinez F, Ubaldi F, Minasi MG, Iacobelli M, Tesarik J, Greco E. Polyscope analysis of meiotic spindle changes in living metaphase II human oocytes during the freezing and thawing procedures. *Hum Reprod* 2004;19:655-659.
- Rienzi L, Romano S, Albricci L, Maggialli R, Capalbo A, Baroni E, Colamaria S, Sapienza F, Ubaldi F. Embryo development of fresh versus vitrified metaphase II oocytes after ICSI: a prospective randomized sibling-oocyte study. *Hum Reprod* 2010;25:66-73.
- Rosenbusch B, Schneider M, Glaser B, Brucker C. Cytogenetic analysis of giant oocytes and zygotes to assess their relevance for the development of digenic triploidy. *Hum Reprod* 2002;17:2388-2393.
- Vanderzwalmen P, Hiemer A, Rubner P, Bach M, Neyer A, Stecher A, Uher P, Zintz M, Lejeune B, Vanderzwalmen S, Cassuto G, Zech NH. Blastocyst development after sperm selection at high magnification is associated with size and number of nuclear vacuoles. *Reprod Biomed Online* 2008;17:617-627.


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Cross-border reproductive care and embryo donation: case study from the UK


Gamete donation is a complex issue and will affect not only the donor and the recipient but also the children born from donation and existing children of the donor and recipient.

The aim of this presentation is to look at what may seem to be a simple situation and then begin to uncover the ethical layers that can ensue from this. It is intended to be an interactive session allowing the delegates to look at various aspects of the case study and how this affects all parties involved.




CROSS-BORDER REPRODUCTIVE CARE AND SPERM DONATION : Case studies from Belgium


Patricia Baetens
Centre for Reproductive Medicine
University Hospital Brussels



Universitair Ziekenhuis Brussel



Vrije Universiteit Brussel




Centrum voor Reproductieve Geneeskunde


Just sharing experience

Conflict of Interest : none


Lesbian couples	897
Single women	1875
Heterosexual couples	1003
Number of consultations on sperm donation between 1992 and 2009	<u>3775</u>
Oocyte donation	1722
Special cases	216
Total number of consultations between 1992 and 2009	<u>5713</u>



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Vrije Universiteit Brussel




Centrum voor Reproductieve Geneeskunde


2 Baetens, ESHRE Campus, 29 - 30 May 2009

Objectives of the presentation


- Law : the body of rules and principles, established by custom and/or agreement, governing a particular kind of activity in a community and enforced by political authority
- Some laws regulate the behaviour or conduct of individuals belonging to an human society according to the cultural and/or religious beliefs of that society
- Law concerning Reproductive Medicine could be considered a reflection of society's beliefs concerning family building
- Family is a group of people (or animals) affiliated by consanguinity, affinity or co-residence
- One of the primary functions of the family is to produce and reproduce persons biologically and socially
- The family of procreation is based on marriage: the goal of this resulting relationship between two people is to produce and enculturate and socialize children
- Western societies: nuclear family or conjugal family (husband, wife and unmarried children who are not of age)



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Vrije Universiteit Brussel



Centrum voor Reproductieve Geneeskunde

3 Baetens, ESHRE Campus, 29 - 30 May 2009

Objectives of the presentation

- If couples can not meet this goal of reproduction in the traditional way, individuals can develop their own beliefs concerning family building, that may not be conform with the law in their home country: the consequence is cross border reproductive care
- Point of view: creative ideas of people concerning family building
- Belgium is one of the European countries with a law concerning Reproductive Medicine without many restrictions and therefore a favourite destination for cross border reproductive care
- Evaluation is needed :
 - Requests should be conform Belgian law
 - Requests need to be in agreement with “the reasonable welfare principle” of the future child

Perception of gamete donation : the influence of legislation : Civil code

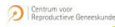
- Motherhood : the legal mother is the woman giving birth
- Oocyte donation: gestation and giving birth compensates the lack of a genetic link:
 - Oocyte donors and the recipient couples agreed that the woman who becomes pregnant and gives birth to the child should be considered as the “real” mother (Baetens et al.; 2000)
 - Oocyte donors always express the lack of any right towards the child born from their genetic material because of authenticity conferred by the pregnancy and fertilisation by the father (Weil; 1994)
- Fatherhood : genetic definition
- Donor insemination : no compensation for the lack of a genetic link with the father

Perception of sperm donation : Influence of the Civil code

- Because of the lack of genetic link :
 - Men are afraid of not being considered the “real” father of the donor child
 - Men are afraid of not being able to father the donor child
 - Women are afraid that their husband will not consider the child born after DI as their child
- Coping with differences : all couples fear that the child might be too different of the potential child they could have had if there was no need for a treatment with donor gametes
 - Couples are afraid of differences : they are afraid that others might see that the child is not genetically related to one of the parents

Anonymous versus non-anonymous donors

- The different opinions on the right of the child to know his/her genetic origin, as inserted by the European convention of the rights of children, are reflected in European legislation
- Types of sperm donation:
 - Anonymous donation : the identity and/or other information about the donor is not to be released
Belgium, France, Spain, Denmark, Norway
 - Donor registration : the child has the right to know the identity of the donor
Sweden, The Netherlands, UK, Switzerland, Austria, New Zealand, Australian state of Victoria
 - Known donation : a woman and a man requesting a treatment in order to procreate a child together without having a partner relationship



Preference for an anonymous sperm donor

Heterosexual couples:

- Medical indication : no choice perspective
- The majority of men : rivalry

Single women (Baetens et al., 1995)

- Ethical concern : the (ab) use of the genetic material of a man without his informed consent
- No known donor available in social environment
- Safety: HIV and other sexually transmitted diseases, genetic screening
- Interference by the biological father is seldom mentioned

Lesbian couples : (Baetens et al., 1996; Englert, 1994; Jacob, 1999)

- Medical screening of the donors
- A safe procedure
- The wish of the lesbian couple to protect the position of the social mother
- The protection of the partner relationship by avoiding the presence and the interference of a third party



Known sperm donation

➤ Definition :

A woman and a man requesting a treatment (IUI or IVF) in order to procreate a child together, related genetically to both of them, without having a partner relationship

➤ Motivation : influence of the legislation

- In countries with donor registration : avoid waiting list for sperm donors
- In countries with donor anonymity : availability of a genetic reference for the children

➤ Two types of known donation :

- Operational approach : A scale defining the degree in which the procreator is involved in the education of the child
- Resulting in a continuum with two poles :
 - Donor versus father
 - Known donation versus co-parenthood



Known donation versus co-parenthood

The use of criteria such as :

- How will the child call the donor
- Will the name of the donor be on the birth certificate of the child
- France: will the donor have “parental rights”
- Will the donor be involved in important decisions concerning the child : name of the child, medical decisions, choice for school
- The extent of contact between the donor and the child
- Legal agreement on visiting rights



Motivation : known donation

Heterosexual couples : always known donation, never co-parenthood

- Request of the intended parents to have a child genetically related to the social father
- Donor : brother of the husband or father of the husband
- Welfare of the child is not always taken into consideration
Advantage for the child : access to his genetic origin but the children are not always informed often to avoid confusion about parental roles

Alternative families : single women and lesbian couples

- Known donation : welfare of the child : to give the child access to the identity of the donor
- Sometimes genetic (lesbian couples) : the donor is the brother of the social mother



Motivation : co-parenthood

Only lesbian couples and single women, never heterosexual couples

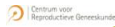
Motivation :

- Welfare of the child: a child has the right to have a “father”
- A child needs to develop an emotional and social relationship with a man
- An opportunity for homosexual men or homosexual male couples to become father



Identity release donors

- Donor registration : Sweden, The Netherlands, UK, Switzerland, Austria, New Zealand, Australian state of Victoria
- The need for genealogical information only exists if the child is told about donor conception
- Motivation :
Anticipating a potential need of the child : the child has access to the identity of the donor if needed



Donor registration

Since 1985, the Sweden legislation gives the donor child the right to receive identifying information about the donor emphasising the importance of parental openness :

- Compliance with the law was considered low because 52% of parents did not tell or did not intend to tell the child (Gottlieb et al., 2000)
- 854 questionnaires of Swedish gynaecologists showed that 72% of the male gynaecologists and 86% of the female gynaecologists were in favour of disclosure. Nevertheless 45% of the male gynaecologists and 36% of the female gynaecologists opposed providing adult offspring with information about the donor (Svanberg et al., Hum. Reprod., 2008)



The views of adult offspring of sperm donation (Mahlstedt et al.; Fertil Steril., 2009)

85 participants (62 women, 13 men) :

- Information about conception :
 - > 18 years : 47%
 - > 10 – 18 years : 19% 66%
 - > < 10 years : 34%
- 57.7% believed that only identity-release sperm donation should be practised :
- Offspring who viewed their legal father as dad instead of a social or adoptive dad, tended to feel good to very good about their means of conception
- Offspring who did not feel positively about their means of conception, tended to view the donor as a biological father
- Offspring who reported a less favourable view of the relationship with their legal father referred to their donor as their biological father



Case 1 : selective anonymous donation

- The spouse: 33 years, worked as an assistant in a firm for film distribution
- The husband: 39 years, working as a police man
- They lived together for 7 years
- The husband had three brothers

- This couple asked for a treatment with the sperm of the three brothers of the husband making coincidence decide which brother would be the actual donor: the sperm of the three donor brothers would be stored
 - The first insemination cycle one of the brothers would be randomly chosen to be the donor
 - The second insemination cycle a second brother would be randomly chosen to be the donor
 - The third cycle the brother who had not been used yet, would be the donor
 - The fourth cycle the first donor brother would be used again

The couple and the donors were not to be informed about who the actual donor was if a pregnancy occurred



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Case 1 : selective anonymous donation : Motivation of the recipients

- Fear of anonymity: the wife did not want to be pregnant from a stranger: she wanted to know something about the genetic origin of the child without knowing who the actual donor was, knowing the actual donor would imply a link between the child and the sperm donor
- The importance of the genetic link between the child and the husband
- This “selective anonymity” would protect the family of the husband: all brothers were equally involved in this project, showing no preferential relationship to one of the brothers
- Protection of the couple and their child from potential conflicts with the brothers as no one will know which brother is the actual donor



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Case 1 : selective anonymous donation : Motivation of the donors

Donor 1 : 43 years, married for 22 years, three children :

- Honoured by the question
- An act of trust : the brothers were very tight to each other and it was therefore natural and legitimate to help this couple
- If the sperm was not used for his brother, the sperm should be destroyed

Donor 2 : 41 year, married for 13 years, two children :

- A natural and technical act: the child would be genetically related to the family
- If the sperm was not to be used for his brother, it could be used for other couples in need of sperm donation

Donor 3 : 34 years, a girlfriend since one month :

- This question confronted him, as the only donor without children, with the question if he could beget children
- The health of the child to be born: he would feel responsible if the child was not healthy
- If the sperm was not used for his brother, the sperm should be destroyed



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Case 1 : selective anonymous donation

- All brothers were very much convinced to help the couple
- Their motivation was slightly different but all three of them agreed that the child should be the child of the recipients: all decisions concerning the child should be taken by the recipients, who are considered to be the parents of the child
- They respected the privacy of the couple and talked only about the donation with the recipient couple and not among themselves as "donor brothers"
- What if the children want to know who the actual donor was?

Case 2 : Intergenerational donation

- French lesbian couple that came tot the centre in 2003 in order to have a treatment with an anonymous donor: they stopped after one treatment cycle
 - They were not at ease with the anonymity of the donor
 - The biological mother started a new education of 3 years as a social worker
- In 2008 : The couple asked treatment with the sperm of father of the social mother, known donation
- The biological mother is 34 years of age, the social mother is 35 years, they were living together for 14 years
- The relationship is complementary: the social mother has no wish to be pregnant

Case 2 : Intergenerational donation : Motivation of the lesbian couple

1. The link with genetic patrimony of the social mother
2. The right of the child to know his genetic origin
3. The life story of the biological mother :
 - Her mother was abandoned when she was three months pregnant
 - She referred to her natural father as the procreator
 - As an adult she saw him three times : the procreator was very annoyed with this situation because he failed to inform his new family about her existence
4. Trust in the genetic patrimony: in terms of health of the child
5. Physical and mental resemblance between father and daughter and consequently a bigger affinity between the social mother and the child
6. Trust in the father

Case 2 : Intergenerational donation : The donor

- The donor was 55 years, divorced of his first wife, the mother of the social mother, after 14 years of marriage
- He had a cohabitating relationship of 23 years: he had no children in this second relationship
- His partner was informed on the donation and agreed with the donation

Case 2 : Intergenerational donation : Motivation of the donor

- The donor is only willing to donate for his daughter : he would never donate his sperm to someone else neither in a know donation cycle nor anonymously
- He considers the donation as a particular act
- He wants to help his daughter by giving her a beautiful gift: the gift of parenthood
- The child will be the child of the lesbian couple: every decision concerning the child is the responsibility of his daughter and her partner
- To him this child will not be different from his other three grandchildren: he will consider all grandchildren in exact the same way

Case 3 : Co-parenthood

French lesbian couple :

- Biological mother (Irene) was 34 years of age, teacher (philosophy)
- Social mother (Nathalie) was 36 years of age, teacher (French)
- Lived together for 3,5 years

French homosexual couple :

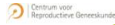
- Biological father (Arnaud) was 27 years of age, theatre agent
- Social father (François) was 42 years of age, actor (has his own group of comedians)
- Lived together for 4 years

Motivation co-parenthood

- The right of the child to know his genetic origin
- The right of a child to know his father
- The right of a child to have a preferential relationship with a man: an affective relationship with a father

Case 3 : Co-parenthood

- Nathalie and Arnaud knew each other first and became friends
- They both started a homosexual partner relationship after they met the first time
- Both lesbian partners always had had a wish for a child:
 - Irene started an adoption procedure before she met Nathalie
 - Nathalie had always co-parenthood in mind
- François had a wish for a child since 20 years
- Arnaud was much younger, had no professional stability: his wish for a child was related to his relationship with François



Case 3 : Co-parenthood

- The oldest female partner (Irene) and the oldest male partner (François) started with self-insemination: a son of 19 months: Till
- Till called his biological mother 'mum' and his biological father 'dad'
- Till lives with his mothers five days a week and he stays with the fathers each weekend
- Till's biological father is mentioned on the birth certificate
- Till's biological father started a legal procedure to obtain paternal rights
- The family of all four parents considered him as a grandchild



Case 3 : Co-parenthood

- The two other partners tried self-insemination for 1 ½ year without result
- Sperm problem: sperm count
- They asked for medical help



Case 4 : Intra-familial sperm donation between brothers

- > Couple from Kazakhstan, lives in Brussels for 2 years
- > Wife: 38 years, endometriosis
- > Husband: 34 years, azoospermia, 3 testicular biopsies: no sperm found
- > Married for 12 years
- > Ask for an IVF-treatment with the sperm of brother of the husband
- > Motivation :
 - > Genetic link
 - > Ethnic resemblance : Asian traits: Mongolia
 - > Cultural aspect : the ancestors of the seven last generations should be known to men
 - > Physical resemblance between the brothers
 - > Healthy family, genetic health of the family



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Case 4 : Intra-familial sperm donation : Motivation

- > People have an obligation towards the family to procreate: family pressure
- > Last chance of treatment :
 - > Age of the wife + endometriosis
 - > This couple stays in Belgium till January 2011: quality of health care
 - > No sperm donation allowed in Kazakhstan
- > The donation will be kept secret: towards the child and towards family and friends
 - > Cultural context does not accept sperm donation
 - > Our child
 - > Normal child: not different from other children within cultural context



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Case 4 : Intra-familial sperm donation : The donor

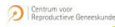
- > He lives in Kazakhstan, a paediatrician, 36 years
- > He is married with three children
- > He only speaks Russian and Kazakhs and psychological counselling is, therefore, impossible although it is mandatory for known sperm donors in our centre
- > His wife is not informed : in cases of known gamete donation our centre asks that the partners of donors are informed and supportive towards the donation
 - > Risk for secrecy
 - > Confusion about parental roles: she would consider this child as the child of her husband
 - > Family business between brothers: there was even no communication between the wife and her brother in-law about the donation
 - > The sperm donor wishes to keep it secret from his wife too



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Case 5 : Polygamous relationship

- > Woman from Congo, 38 years
- > She lives in France
- > She is divorced after 7 years of marriage because she couldn't have children
- > She has a relationship of 3 years with a man who lives in Belgium
- > No treatment possible in France because the couple doesn't live together and they are not legally married
- > She wants a child with her partner



Case 5 : Polygamous relationship

- > The partner is 42 years
- > He is legally married for 15 years, with his legal wife he has 4 daughters of 16, 10, 8 and 4 years
- > He asked his legal wife permission to have a second wife according to the customs of the Balouba, his wife agreed and if the first wife agrees, this relationship is an official relationship according to the customs of the Balouba
- > His second wife has no children and she needs to have one child
- > He has 4 children and having a fifth child is not a priority for him
- > No wish for a son, he is religious: the sex of the child should be 'God's choice'
- > His name will be on the birth certificate of the child and he has paternal rights, responsibility and obligations towards the child



Case 5 : Polygamous relationship

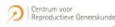
- > The wife is 39 years
- > She agreed on the polygamous relationship because she preferred her husband to have a second, more or less, official wife and because he accepted not to have other adulterous relationships with different women
- > Her father had 3 official wives
- > She knows the second wife, her 4 daughters also know the second wife: they meet if the second wife comes to Brussels for celebrations, Christmas and family events
- > There is no interference of the second wife with her household or with the education of her 4 daughters
- > The child of the second wife will be part of an extended family, a sibling to her 4 daughters
- > The future child will not be related to the family of the first wife, but it is very important that the child is related to the family of his father



Conclusion

- Couples can be very creative in finding solutions for building a family if “nature” fails or if their life situation does not allow them to procreate in a natural way
- Will parents be better parents if they create their family consistent to their beliefs?
- Will it be easier for parents to learn their children to live with the consequences of the irreversible choices they made concerning family building if they are consistent with their beliefs?
- Psychologists should shoulder the responsibility to refuse a request if “the reasonable welfare principle” for the future child is considered not to be met

(Baetens et al., 2002, Counselling lesbian couples, RBM online; 6, 75-83)



Conclusion : At the benefit of the parents or at the benefit of the child ?

- Case 1 : Selective anonymous donation
 - The child closest to the potential child this couple could have had if there was no need for a treatment with donor gametes without losing the advantages of donor anonymity
 - What if the child wants to have access to the identity of the actual donor?
- Case 2 : Intergenerational donation in a lesbian couple
 - The child is genetically related to the family of the social mother
 - The genetic link increases the parental bonding with the social mother
 - The child has access to his genetic origin
 - Confusion about parental roles
- Case 3 : Co-parenthood
 - The right of the child to know his father and to have an affective relationship with his father



Conclusion : At the benefit of the parents or at the benefit of the child ?

- Case 4 : Intra-familial sperm donation between brothers
 - The child belongs to the family of the husband
 - Religious and cultural: secrecy is needed, disclosure might harm the couple, the donor and the child, “normal” child
 - Last chance child in a social and cultural situation where there is much pressure to procreate
- Case 5 : Polygamous relationship
 - The need of the biological mother to have a child in a cultural context that outcasts childless women
 - Anonymity is not acceptable in this cultural context
 - It is important that the child is related and belonging to the family of his father
 - How will the child grow up in a society were polygamous relationship are not common and not legally protected?





CROSS-BORDER REPRODUCTIVE CARE

OOCYTE DONATION IN SPAIN

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The author declares no commercial/financial or other conflicts of interest

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Learning objectives

- ▶ Information about the egg donation in Spain
- ▶ Learn about destination chosen
- ▶ Understand patient's needs


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Outline


- ▶ **Introduction:**
 - Reflections about the egg donation treatment
 - Information about the egg donation in Spain
- ▶ **Case study:**
 - Material and methods
 - Results
 - Conclusions


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The egg donation: reflections


- ▶ **Investigation:**
 - New protocols to get higher pregnancy rates
 - Donors as control group
- ▶ **Legislation:**
 - According development
 - High variability between countries
- ▶ **Patient:**
 - First need is pregnancy
 - Special patients


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The egg donation: reflections

- ▶ **Treatment needed is not available:**
 - Waiting list
 - High cost
 - Specific techniques
- ▶ **Differences between countries because of legislation:**
 - Treatment forbidden
 - Restrictions for some categories of patients
- ▶ **Consequence: patients travelling across Europe**
(Pennings et al)


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Donations data

Country	Donors per million hab.
Spain	34,2
EU	16,8
United States	26,6
Germany	15,1
UK	13,2


Spanish National Transplant Organization 2008


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Oocyte donation's data in Spain


- ▶ IVF Registries in Spain:
 - Voluntary register of the Spanish Fertility Society
 - Mandatory register of the Catalanian Government
 - European IVF Monitoring (Nyboe Andersen et al. 2009)
- ▶ ESHRE's cross – border reproductive care pilot study (Amsterdam, 2009)


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Oocyte donation's law in Spain


- ▶ Law 35/1988
- ▶ Real Decreto 412/1996
- ▶ Law 14/2006
 - Contract between donor and authorized centre
 - Free. Compensation accepted
 - Anonym
 - 18 years old
 - Medical and psychological tests
 - Maximum 6 children
 - No filiations


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Oocyte donation procedure in Spain


- ▶ Donors:
 - Recruitment
 - Informative appointment
 - Medical visit
 - Donors follow up


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Oocyte donation procedure in Spain


- ▶ Recipient treatment:
 - Synchronized: donor and recipient stimulated simultaneously
 - Continuous RHT: donation done at OR
 - Vitrificated oocytes: egg bank

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Oocyte donation procedure in Spain


- ▶ Foreign patients:
 - Egg donation nurse coordinator or international department
 - Treatment accomplished after 2 visits:
 - First contact by phone or e-mail: info recovering
 - First appointment with physician. Frozen sperm sample
 - Second visit: donation - embryo transfer
 - US and blood tests done in original country

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Outline


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Material and methods

- ▶ 19696 patients
- ▶ 9 IVI centres in Spain
- ▶ Data analyzed:
 - Original country
 - Treatment requested
 - City in Spain chosen


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Material and methods




Total of foreign patients:
10.95%


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Results

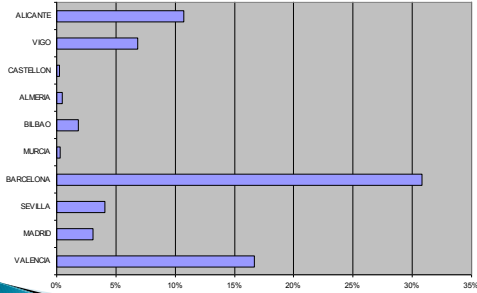
EUROPE	95,49%
AMERICA	2,72%
ASIA	0,91%
AFRICA	0,75%
OCEANIA	0,13%




120 COUNTRIES

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Results: city chosen

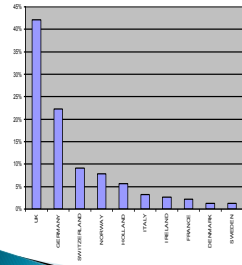


City	Percentage
ALICANTE	~11%
VIGO	~8%
CASTELLON	~1%
ALMERIA	~1%
BILBAO	~2%
MURCIA	~1%
BARCELONA	~31%
SEVILLA	~5%
MADRID	~4%
VALENCIA	~17%

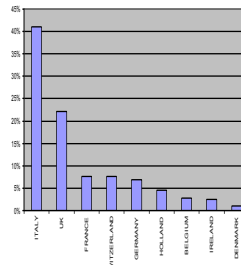
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Results: country per city

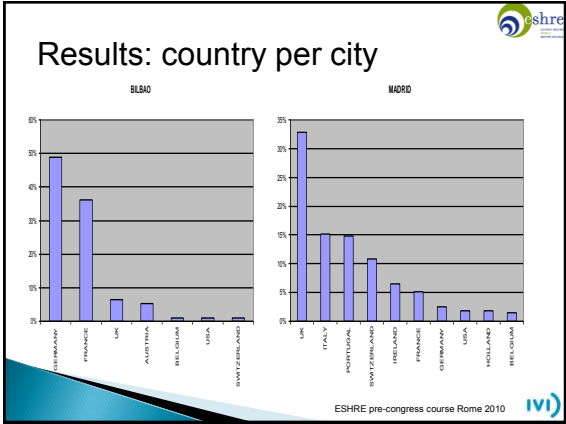
ALICANTE

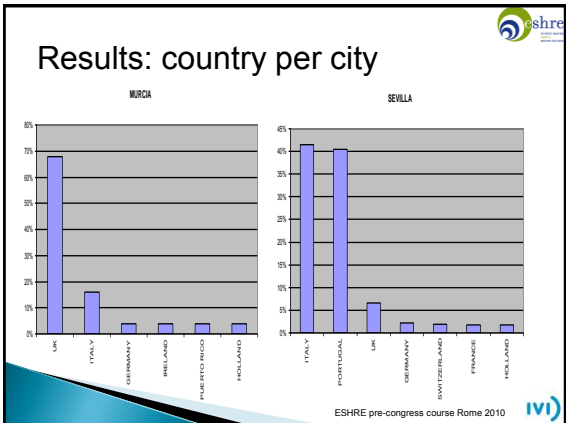


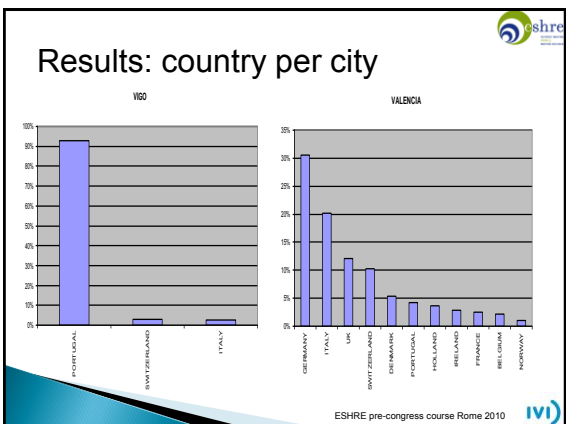
BARCELONA

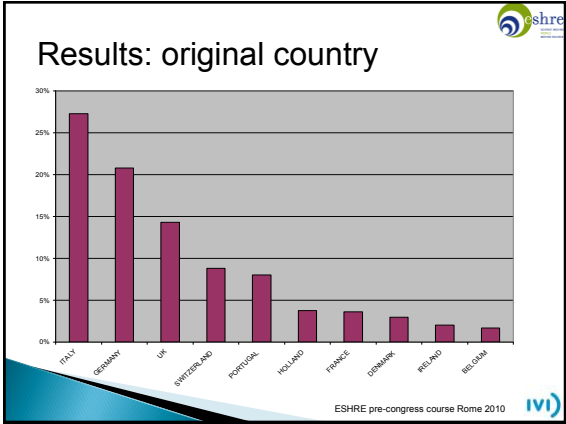


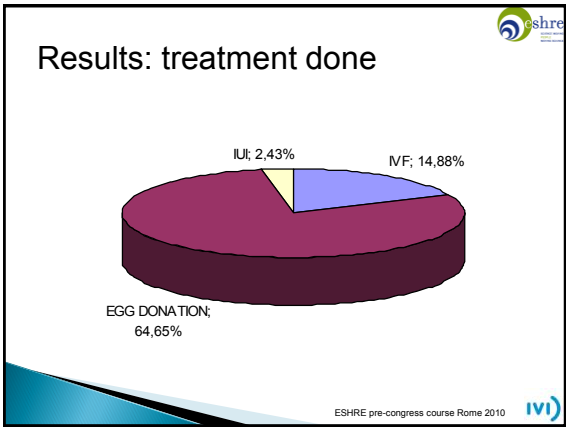
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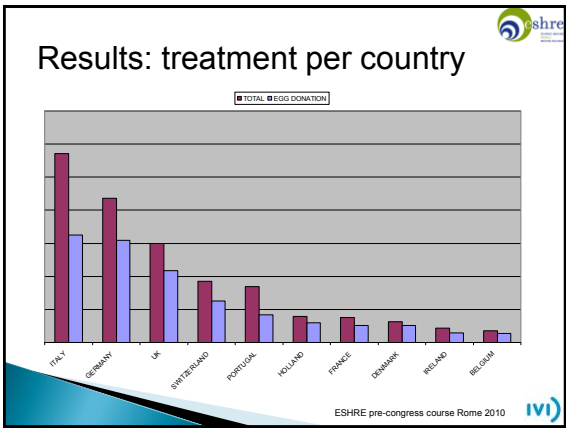













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Conclusions

- ▶ There is a high number of European patients travelling in Europe looking for pregnancy.
- ▶ Oocyte donation is the most requested treatment in Spain by foreign patients.
- ▶ The destination is chosen depending:
 - Accessibility by transport.
 - Facilities offered.

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Thank you for your attention !

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Cross-Border Reproductive Care: Patients' Perceptions

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(No disclosures)

Learning Objectives

- To situate cross-border reproductive care within globalization frameworks
- To review the literature on cross-border reproductive care
- To examine additional “causes” of cross-border reproductive travel from patients’ perspectives
- To rethink the language of “reproductive tourism”

Globalization Defined

- **Globalization:** “the ever faster and ever denser streams of people, images, consumer goods, money markets, and communication networks around the world” (Schaebler and Stenberg 2004:xv-xvi)

Anthropology of Globalization

- Appadurai: Global Scapes (1995)
- Ong and Collier: Global Assemblages (2005)
- Tsing: Global Frictions (2005)
- Ferguson: Global Shadows (2006)

Arjun Appadurai's "Scapes"

- Ethnoscapes (movements of peoples)
- Technoscapes (movements of technology)
- Financescapes (movements of capital)
- Mediascapes (movements of images)
- Ideoscapes (movements of ideas)

Additional Scapes:

Of Concern to Global Health

- Bioscapes (pathogens, vectors)
- Somatoscapes (gametes, organs, body parts)
- Toxiscapes (pollutants, chemical substances)
- Pharmacoscapes (medications, illegal drugs)
- Foodscapes (junk foods, McDonalds)
- Lifescapes (sedentarism, addictions)

Cross-border Reproductive Care

(aka Reproductive Tourism, Fertility Tourism, Procreative Tourism)



Reproductive Tourism Defined

- “the traveling by candidate service recipients from one institution, jurisdiction or country where treatment is not available to another institution, jurisdiction or country where they can obtain the kind of medically assisted reproduction they desire. As such, it is part of the more general ‘medical tourism’” (Pennings 2002:337)

“Reproscapes”

- Circulating assisted reproductive technologies (technoscapes)
- Circulating reproductive actors (ethnoscapes)
- Circulating body parts (somatoscapes)
- Large-scale global ART “baby business” (financescapes)
- Images of making test-tube babies “on holiday” (mediascapes)
- Ideas about “assisted” reproduction (ideoscapes)

Global “Reproflows”

- Flow of technologies between countries
- Flow of expertise between countries
- Flow of embryos between countries
- Flow of men and women seeking reproductive “assistance”
- Flow of reproductive “assistors”
- Flow of capital
- Flow of media

Factors Promoting Reproductive Tourism: A Literature Analysis

- Individual countries may prohibit a specific service for religious or ethical reasons
- A specific service may be unavailable because of lack of expertise, equipment, or lack of donor gametes
- A service may be unavailable because it is not considered sufficiently safe or its risks are unknown

Factors Promoting Reproductive Tourism (Cont.)

- Certain categories of individuals may not receive a specific service on the basis of age, marital status, or sexual orientation
- Services operate on a market or quasi-market basis, thus affecting affordability and supply
- Services may simply be cheaper in other countries
- Privacy concerns

Policy Debate

- “The more widespread this phenomenon, the louder the call for international measures to stop these movements” (Pennings 2002:337)

Research Project: Part I

- “Globalization and Reproductive Tourism in the Arab World”
- Fulbright and National Science Foundation
- United Arab Emirates: Middle Eastern “hub” of intense global flows
- 6 months (January – June 2007)
- Conceive: Largest private IVF unit in UAE

Ethnographic Study

- Unstructured and semistructured interviews
- 240 individuals, representing 125 patient-couples
- Representing 50 countries
- Majority:
 - Indian --British --Filippino
 - Lebanese --Pakistani --Palestinian
 - Emirati --Sudanese --Syrian

Major Finding 1

- Many additional causes of reproductive travel not yet cited in literature
- Importance of patients' perspectives
- Importance of listening to "reproductive travel stories" through qualitative research
- What propels infertile couples on transnational "quests for conception"?

Major Finding 2: "Travel" vs "Tourism"

- Tourism: "fun," "leisure," "holidays"
- Travel: desperate, stressful, costly
- Tourism: cavalier, insensitive, gimmick, mockery of suffering
- Travel: preferences *not* to travel
- Reproductive "exile": "forced" to travel across borders

3 Patterns of "Reproflow"

- To the UAE
- From the UAE
- To and from the UAE

Reproflows *to* the UAE

- The lure of Dubai
- 3-month visitor’s visa
- Physician reputation
- Lack of access to ARTs in home countries (e.g., Sub-Saharan Africa)
- European restrictions
- “Reproductive exiles” from the NHS

Reproflows *from* the UAE

- Desire for secrecy among “locals”
- Waiting lists at government clinics
- Religious restrictions
 - Sunni Muslim ban on third-party reproductive assistance
 - Only Shia Muslim Iran and Lebanon allow third parties
 - Abortion is criminalized

Reproflows *from* the UAE

- Medical “horror stories”
- Medical “expatriotism”
- IVF holidays back home
- State subsidization back home
- IVF tourist packages
- “Anchor babies” and citizenship rights

Reproflows *to and from* the UAE

- Fragmented services
- Abortion restrictions
- Frozen embryo retrieval
- Repetition and doctor shopping

Desires *not* to Travel

- Physician trustworthiness and comfort
- Reproductive emergencies en route
- Logistics and pragmatics of travel
- Importance of work
- Infertile couples “staying together”

Research Project: Part II

- July 2007 – December 2009
- 2 US Research Sites:
 - “Arab Detroit” (capital of Arab-America)
 - New Haven, CT (East Coast Ivy League)
 - Interview with >70 reproductive travelers

Arab Detroit

- “Arenas of constraint” on access to ARTs in US
- Low-income laborers and refugees from war-torn and impoverished countries
- Low-wage jobs in declining Michigan economy
- No medical insurance
- Language and cultural barriers
- Debt and financial hardship
- Desires to access ARTs are frustrated

Travel *from* Arab Detroit

- Costs of IVF in US overwhelming to citizens
- Being “stuck” in US and its health care quagmire
- “Return reproductive tourism” to Middle East
 - Family holiday
 - ARTs in ME less expensive, even with travel
 - Political threats of return travel (eg, Iraq, Lebanon)

Travel *to* New Haven, CT

- Ivy League prestige factor and trustworthiness
- “Nobel” gametes
- Phenotypic similarity and race consciousness
- Relaxed regulatory environment: “Wild West”
- Lack of surrogacy restrictions and “traveling surrogates”

Travel to New Haven, CT

- Economic “mandate states”
- Religious restrictions and cultural connections for Italians and Turks
- Role of “ART Troubadors” (Traveling IVF Doctors)

Discussion

- Global reprocapsce is complex
- Many “arenas of constraint”
- Excellent excellence of “stratified reproduction”
- “Fruits of globalization”: Test-tube babies
- “Frictions” and “shadows” in global reproscapes
- Rethinking reproductive tourism as reproductive “exile”

Sobering Note

- Most infertile couples will never know joy of making an IVF baby
- ARTs will never be viable solution for world’s infertile poor
- Governmental neglect of infertility and ARTs
- Infertility is not a life-threatening disease
- Is having children a basic human right?
- Is access to ARTs a reproductive right?

191 WHO Member States

- Only 48 offer IVF or other ARTs
- < 1% of projected need in largest countries (China, India, Pakistan, Indonesia, Egypt)
- Average cost of IVF:
US: >\$10,000 (>\$60,000 per test-tube baby)
UAE: \$5,000
Iran: \$1,200
- Cost of 1 IVF > GDP in 50% WHO member states

What Can Be Done?

- Prevention of *preventable* causes of infertility, particularly treatment of reproductive tract infections (RTIs)
- But not all infertility *can* be prevented, particularly male infertility
- Ongoing need for ARTs, including in resource-poor settings

Future Scholarship

- Need to follow global flows of ARTs into the new millennium
- Need to follow reproductive travelers around the globe
- Anticipate effects of new ARTs and repro-genetic technologies on local societies
- Huge ethical dilemma of PGD for sex selection and “repro-genetic tourism”
- Ongoing importance of reproduction and reproductive technologies to global health

References

- **Appadurai, Arjun, ed.** (2001) *Globalization*. Durham, NC: Duke University Press.
- **Ferguson, James** (2006) *Global Shadows: Africa in the Neoliberal World Order*. Durham, NC: Duke University Press.
- **Ginsburg, Faye, and Rapp, Rayna, eds.** (1995) *Conceiving the New World Order*. Berkeley: University of California Press.
- **Inhorn, Marcia C.** (1994) *Quest for Conception: Gender, Infertility, and Egyptian Medical Traditions*. Philadelphia: University of Pennsylvania Press.
- **Inhorn, Marcia C.** (2003) *Local Babies, Global Science: Gender, Religion, and In Vitro Fertilization in Egypt*. New York: Routledge.
- **Inhorn, Marcia C.** (2009) "Right to Assisted Reproductive Technology: Overcoming Infertility in Low-resource Countries." *International Journal of Gynecology and Obstetrics* 106:172-174.
- **Inhorn, Marcia C., and Fakih, Michael H.** Arab Americans, African Americans, and Infertility: Barriers to Reproduction and Medical Care." Special Issue on "Health Disparities in Infertility." *Fertility and Sterility* 85(4):844-852.

References (cont.)

- **Inhorn, Marcia C. and Patrizio, Pasquale** (2009) "Rethinking Reproductive 'Tourism' as Reproductive 'Exile,' *Fertility & Sterility* 92(3):904-906.
- **Inhorn, Marcia C., Patrizio, Pasquale, and Serour, Gamal I.** (2010) "Third-party Reproductive Assistance around the Mediterranean: Comparing Sunni Egypt, Catholic Italy, and Multisectarian Lebanon. In Marcia C. Inhorn and Soraya Tremayne, eds., *Islam and the Biotechnologies of Human Life*. New York: Berghahn, in press.
- **Inhorn, Marcia C. and Shrivastav, Pankaj** (2010) "Globalization and Reproductive Tourism in the UAE," *Asia Pacific Journal of Public Health*, in press.
- **Ong, Aihwa, and Collier, Stephen J., eds.** (2005) *Global Assemblages: Technology, Politics, and Ethics as Anthropological Problems*. Malden, MA: Blackwell.
- **Pennings, Guido** (2002) "Reproductive tourism as moral pluralism in motion." *Journal of Medical Ethics* 28:337-341.
- **Tsing, Anna Lowenhaupt** (2005) *Friction: An Ethnography of Global Connection*. Princeton, NJ: Princeton University Press.

Mark your calendar for the upcoming ESHRE campus workshops!

- **Basic Genetics for ART Practitioners**
organised by the SIG Reproductive Genetics
16 April 2010 - Porto, Portugal
- **Array technologies to apprehend developmental competence and endometrial receptivity: limits and possibilities**
organised by the Task Force Basic Science in Reproduction
22 April 2010 - Brussels, Belgium
- **The management of infertility – training workshop for junior doctors, paramedicals and embryologists**
organised by the SIG Reproductive Endocrinology, SIG Embryology and the Paramedical Group
26-27 May 2010 - Kiev, Ukraine
- **Preimplantation genetic diagnosis: a celebration of 20 years**
organised by the SIG Reproductive Genetics
1 July 2010 - Rome, Italy
- **EIM 10 years' celebration meeting**
organised by the European IVF Monitoring Consortium
11 September 2010 - Munich, Germany
- **The determinants of a successful pregnancy**
organised by the SIGS Reproductive Surgery, Early Pregnancy and Reproductive Endocrinology
24-25 September 2010 - Dubrovnik, Croatia
- **Basic training workshop for paramedics working in reproductive health**
organised by the Paramedical Group
6-8 October 2010 - Valencia, Spain
- **Forgotten knowledge about gamete physiology and its impact on embryo quality**
organised by the SIG Embryology
9-10 October 2010 - Lisbon, Portugal

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Keep an eye on our calendar section for more information on

Upcoming events

- **Female and male surgery in human reproductive medicine**
8-9 October 2010 - Treviso, Italy
- **Promoting excellence in clinical research: from idea to publication**
5-6 November 2010 - Thessaloniki, Greece
- **“Update on pluripotent stem cells (hESC and iPS)” and hands on course on “Derivation and culture of pluripotent stem cells”**
8-12 November 2010 - Valencia, Spain
- **Women’s health aspects of PCOS (excluding infertility)**
18 November 2010 - Amsterdam, The Netherlands
- **Endoscopy in reproductive medicine**
24-26 November 2010 - Leuven, Belgium
- **Fertility and Cancer**
25-26 November 2010 - Bologna, Italy
- **The maternal-embryonic interface**
2-3 December 2010 - Valencia, Spain
- **GnHR agonist for triggering of final oocyte maturation – time for a paradigm shift**
3 December 2010 - Madrid, Spain
- **Raising competence in psychosocial care**
3-4 December 2010 - Amsterdam, The Netherlands

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