

VIEWS AND REVIEWS

1083 Introduction: To transfer or not transfer...a mosaic embryo, that is the question

C. Simon

Valencia, Spain; Stanford, California; and Houston, Texas

Understanding the nature of embryo mosaicism will help clinicians make a logical decision on whether or not to transfer the embryo.

1085 Detection of mosaicism at blastocyst stage with the use of high-resolution next-generation sequencing

S. Munné and D. Wells

Livingston, New Jersey; and Oxford, United Kingdom

New genetic analysis methods have allowed mosaicism to be detected in biopsy specimens from human blastocysts, providing new insights into embryo biology and the possibility of enhanced assessment of viability.

1092 Chromosomal mosaicism detected during preimplantation genetic screening: results of a worldwide Web-based survey

A. Weissman, G. Shoham, Z. Shoham, S. Fishel, M. Leong, and Y. Yaron

Holon, Tel Aviv, and Jerusalem, Israel; Nottingham, United Kingdom; and Hong Kong

One hundred and two units worldwide participated in a Web-based survey on practices and opinions regarding chromosomal mosaicism detected by comprehensive chromosomal screening in preimplantation genetic screening.

1098 Mosaicism between trophectoderm and inner cell mass

A. Capalbo and L. Rienzi

Rome and Vicenza, Italy

The few studies on human blastocysts suggest that a mosaic euploid/aneuploid configuration involves around 5% of embryos. No evidence for preferential allocation of abnormal cells to the trophectoderm is defined.

1107 Assessing the true incidence of mosaicism in preimplantation embryos

M. Vera-Rodriguez and C. Rubio

Valencia, Spain

Larger studies focused on the consequences of transferring mosaic embryos will help us to understand the risks of discarding a possibly viable embryo versus transferring one with lower implantation potential.

1113 Current experience concerning mosaic embryos diagnosed during preimplantation genetic screening

G. L. Harton, C. Cinnioglu, and F. Fiorentino

Miami, Florida; and Rome, Italy

A review of the current knowledge on mosaicism in embryos diagnosed during preimplantation genetic screening/comprehensive chromosome screening with a look ahead to how we can work together to better understand mosaicism during embryo screening.

INKLINGS

1120 Natural ovarian stimulation (NATOS): effectively natural

R. Fanchin

Suresnes, France

Fertility and Sterility® (ISSN 0015-0282) is a registered trademark of the American Society for Reproductive Medicine and is published monthly in two volumes by Elsevier Inc., 230 Park Avenue, Suite 800, New York, NY 10169. Periodicals postage paid at New York, NY and at additional mailing offices. Membership dues to the American Society for Reproductive Medicine include \$50.00 for *Fertility and Sterility®*. Publication of an advertisement or other product mentioned in *Fertility and Sterility* should not be construed as an endorsement of the product or the manufacturer's claim. Statements and opinions expressed in articles and communications herein are those of the authors and not necessarily those of the editors, publisher, or the American Society for Reproductive Medicine or any organizations endorsing this journal. **Subscriptions:** Personal Rates: US\$464.00 (USA), US\$682.00 (all other countries); Students: US\$176.00 (USA), US\$181.00 (all other countries). Prices include postage and are subject to change without notice. Any enquiry relating to subscriptions should be sent to: **The Americas:** Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043; Tel: (800) 654-2452 (U.S. and Canada), (314) 447-8871 (outside U.S. and Canada); Fax: (314) 447-8029; E-mail: journalscustomerservice-usa@elsevier.com (for print support); journalslinesupport-usa@elsevier.com (for online support). **Japan:** Elsevier Inc., Customer Support Department, 9-15 Higashi-Azabu 1-chome, Minato-ku, Tokyo 106-0044, Japan; Tel: (+81) 3 5561-5033; Fax: (+81) 3 5561-5047; e-mail: info@elsevier.co.jp. **Asia Pacific (excluding Japan):** Elsevier Inc. (Singapore) Pte Ltd., No. 1 Temasek Avenue, 17-01 Millenia Tower, Singapore 039192; Tel: (+65) 434-3727; Fax: (+65) 337-2230; e-mail: asiainfo@elsevier.com.sg. **Latin America:** Elsevier Inc., Rua Sete de Setembro 111/16 Andar, 20050-002 Centro, Rio de Janeiro - RJ, Brazil; Tel: (+55) (21) 3970 9300; Fax: (+55) (21) 2507 1991; e-mail: rsola.info@elsevier.com.br. **South America:** for orders, claims, and help desk information, please contact the Regional Sales Office in Florida as listed above. **Rest of World:** Elsevier Inc., Customer Service Department, P.O. Box 211, 1001 AE Amsterdam, the Netherlands; Tel: (+31) 20-485-3757; Fax: (+31) 20-485-3432; e-mail: ninfo-f@elsevier.nl.

POSTMASTER: Send address changes to *Fertility and Sterility®*, Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043.



SEMINAL CONTRIBUTION

1122 In vitro fertilization with preimplantation genetic diagnosis for aneuploidies in advanced maternal age: a randomized, controlled study

C. Rubio, J. Bellver, L. Rodrigo, G. Castillón, A. Guillén, C. Vidal, J. Giles, M. Ferrando, S. Cabanillas, J. Remohí, A. Pellicer, and C. Simón

Valencia, Barcelona, Madrid, and Bilbao, Spain

Preimplantation genetic diagnosis for aneuploidies is superior to blastocyst transfer, not only in clinical outcome at first embryo transfer but also in dramatically decreasing miscarriage rates and shortening time to pregnancy.

1145 Advanced maternal age patients benefit from preimplantation genetic diagnosis of aneuploidy

S. Munné and J. Cohen

Livingston, New Jersey

FERTILITY AND STERILITY: 50 YEARS AGO TODAY

1147 Tests used in the diagnostic evaluation of infertility: from ubiquitous to obsolete

E. C. Feinberg

Chicago, Illinois

ASRM PAGES

1130 Transferring embryos with genetic anomalies detected in preimplantation testing: an Ethics Committee Opinion

Ethics Committee of the American Society for Reproductive Medicine
Birmingham, Alabama

This Opinion discusses possible provider responses to patient requests for transfers of embryos with known genetic anomalies.

1136 Using family members as gamete donors or gestational carriers

Ethics Committee of the American Society for Reproductive Medicine
Birmingham, Alabama

Intrafamilial gamete donation and gestational surrogacy arrangements are generally acceptable, except when donation or gestational surrogacy simulates consanguineous or incestuous unions.

REFLECTIONS

1143 Antiadhesion barrier gels: time for evidence-informed practice in gynecologic surgery?

J. Bosteels
Bonheiden, Leuven, and Gent, Belgium

ORIGINAL ARTICLES

ANDROLOGY

1148 Does cryopreservation of sperm affect fertilization in nonobstructive azoospermia or cryptozoospermia?

N. Schachter-safrai, G. Karavani, E. Levitas, M. Friger, A. Zeadna, E. Lunenfeld, and I. Har-Vardi
Beer Sheva and Jerusalem, Israel

In patients with cryptozoospermia, intracytoplasmic sperm injection outcomes are superior in fresh compared with frozen ejaculated sperm, whereas in non-obstructive azoospermia fresh and frozen testicular sperm yielded similar results.

ASSISTED REPRODUCTION

1153 Abnormal implantation after fresh and frozen in vitro fertilization cycles

E. T. Wang, A. S. Q. Kathiresan, C. Bresee, N. Greene, C. Alexander, and M. D. Pisarska
Los Angeles, California

In autologous in vitro fertilization cycles resulting in a positive pregnancy test, fresh blastocyst embryo transfers had the lowest overall risk of abnormal implantation compared to frozen and non-blastocyst transfers.

1159 Transvaginal ultrasound to guide embryo transfer: a randomized controlled trial

G. Karavani, A. Ben-Meir, Y. Shufaro, J. H. Hyman, and A. Revel
Jerusalem, Petah-Tikva, and Tel-Aviv, Israel

A randomized controlled trial at the time of embryo transfer shows that vaginal ultrasound guidance is more accurate and less painful than abdominal ultrasound guidance.

1166 Embryo transfer simulation improves pregnancy rates and decreases time to proficiency in Reproductive Endocrinology and Infertility fellow embryo transfers



R. J. Heitmann, M. J. Hill, J. M. Csokmay, J. Pilgrim, A. H. DeCherney, and S. Deering
Bethesda, Maryland; and Tacoma, Washington

Use of ET simulation in fellowship education seems to improve pregnancy rates and shorten time to proficiency compared with no simulation training.

1173 Preimplantation genetic diagnosis for aneuploidy testing in women older than 44 years: a multicenter experience

F. M. Ubaldi, D. Cimadomo, A. Capalbo, A. Vaiarelli, L. Buffo, E. Trabucco, S. Ferrero, E. Albani, L. Rienzi, and P. E. Levi Setti
Rome, Marostica, Messina, Naples, Rozzano, and Milan, Italy

Objective counseling is crucial in women ≥ 43 years requesting in vitro fertilization. Nevertheless, good ovarian reserve and preimplantation genetic diagnosis for aneuploidy may result in low miscarriage and good delivery rates in women aged 44.0–44.9 years.

ENDOMETRIOSIS

1181 Incremental direct and indirect cost burden attributed to endometriosis surgeries in the United States



A. M. Soliman, H. Taylor, M. Bonafede, J. K. Nelson, and J. Castelli-Haley
North Chicago, Illinois; New Haven, Connecticut; and Ann Arbor, Michigan

Endometriosis patients who underwent surgery had significantly higher healthcare resource utilization that translated to substantial direct and indirect cost burden compared with patients without surgery.

1191 Peritoneal fluid cytokines related to endometriosis in patients evaluated for infertility



H. Jørgensen, A. S. Hill, M. T. Beste, M. P. Kumar, E. Chiswick, P. Fedorcsak, K. B. Isaacson, D. A. Lauffenburger, L. G. Griffith, and E. Qvigstad
Oslo, Norway; and Cambridge, Massachusetts

A study of 107 infertile women identified 13 peritoneal fluid cytokines distinguishing women with or without endometriosis, indicating aberrant Th1/Th2-activity, angiogenesis, and hematopoietic stem cell recruitment as possible pathogenetic mechanisms for endometriosis.

FERTILITY PRESERVATION

1200 Increasing awareness of age-related fertility and elective fertility preservation among medical students and house staff: a pre- and post-intervention analysis



E. Anspach Will, B.-S. Maslow, L. Kaye, and J. Nulsen
Farmington, Connecticut

We discuss how knowledge of age-related fertility decline and elective preservation is limited among medical students and house staff. Education, even with brief interventions, is needed across all levels of training and specialties.

1206 Fertility preservation and refreezing of transplanted ovarian tissue—a potential new way of managing patients with low risk of malignant cell recurrence

S. G. Kristensen, V. Giorgione, P. Humaidan, B. Alsbjerg, A.-M. B. Bjørn, E. Ernst, and C. Y. Andersen
Copenhagen, Skive, and Skejby, Denmark

Human ovarian tissue was successfully refrozen after transplantation for several years, which could be a new way of handling patients with low risk of malignant cell recurrence.

1214 Assessing reproductive choices of women and the likelihood of oocyte cryopreservation in the era of elective oocyte freezing



L. W. Milman, S. Senapati, M. D. Sammel, K. D. Cameron, and C. Gracia
Philadelphia, Pennsylvania

Reproductive knowledge and specific demographic characteristics influence consideration of elective egg freezing and the thresholds of willingness to pay for this service.

GYNECOLOGY

1223 Prevalence of intrauterine adhesions after the application of hyaluronic acid gel after dilatation and curettage in women with at least one previous curettage: short-term outcomes of a multicenter, prospective randomized controlled trial



A. B. Hooker, R. de Leeuw, P. M. van de Ven, E. A. Bakkum, A. L. Thirkow, N. E. A. Vogel, H. A. A. M. van Vliet, M. Y. Bongers, M. H. Emanuel, A. E. M. Verdonkschot, H. A. M. Brölmann, and J. A. F. Huirne

Zaandam, Amsterdam, Groningen, Eindhoven, Veldhoven, Hoofddorp, and Blaricum, the Netherlands

Intrauterine application of auto-crosslinked hyaluronic acid after dilatation and curettage for miscarriage in women with at least one previous procedure may reduce the incidence and severity of intrauterine adhesions.

INFERTILITY

1232 Intrinsic fertility of human oocytes

S. J. Silber, K. Kato, N. Aoyama, A. Yabuuchi, H. Skaletsky, Y. Fan, K. Shinohara, N. Yatabe, and T. Kobayashi

St. Louis, Missouri; Tokyo, Japan; and Cambridge, Massachusetts

In a large natural cycle, single embryo transfer in vitro fertilization program, live baby rate per egg reveals the intrinsic fertility of the human oocyte without stimulation.

MENTAL HEALTH

1238 A first-choice combined oral contraceptive influences general well-being in healthy women: a double-blind, randomized, placebo-controlled trial

N. Zethraeus, A. Dreber, E. Ranehill, L. Blomberg, F. Labrie, B. von Schoultz, M. Johannesson, and A. L. Hirschberg

Stockholm and Gothenburg, Sweden; Zurich, Switzerland; and Quebec City, Montreal, Canada

A randomized, placebo-controlled trial on a first-choice combined oral contraceptive found decreased general well-being but no statistically significant effect on depressive symptoms in healthy women.

1246 Influence of endogenous estradiol, progesterone, allopregnanolone, and dehydroepiandrosterone sulfate on brain resting state functional connectivity across the menstrual cycle

S. K. Syan, L. Minuzzi, D. Costescu, M. Smith, O. R. Allega, M. Coote, G. B. C. Hall, and B. N. Frey
Hamilton, Ontario, Canada

Endogenous levels of estradiol, progesterone, allopregnanolone, and dehydroepiandrosterone sulfate were correlated with specific patterns of brain resting state functional connectivity in the mid-follicular and late luteal menstrual cycle phases.

REPRODUCTIVE ENDOCRINOLOGY

1256 Antimüllerian hormone levels are lower in BRCA2 mutation carriers

Online Extra

L. Johnson, M. D. Sammel, S. Domchek, A. Schanne, M. Prewitt, and C. Gracia
Philadelphia, Pennsylvania; and Charlotte, North Carolina

BRCA2 mutation carriers have antimüllerian hormone (AMH) levels that are significantly lower than healthy low-risk control women and have increased odds of having low AMH levels.



: Article is only available online



: Complete article available online

Visit www.fertstert.org for e-only and e-extra materials

Complete Guide for Authors may be found on the journal's website, <http://www.fertstert.org/authorinfo>