Stem Cell Course in the Middle East: Science Diplomacy and International Collaborations During the Arab Spring

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Abstract In April 2011, an international advanced course and workshop entitled “Frontiers in Human Pluripotent Stem Cells” and an International Congress on Fertility and Genetics (<http://www.fertigen.com.jo/ConferenceDetails.aspx>) was held in Amman Jordan hosted by the Jordanian Society of Fertility and Genetics under the auspices of the International Cell Research Organization (ICRO), a UNESCO associated NGO. The Congress President Dr. Zaid Kilani, with Dr. Abdel Latif Abu Khadra, President of the Jordanian society for Fertility and Genetics, Dr. Rana Dajani of the Hashemite University of Jordan, and their Organizing Committee proved to be an excellent organizers and dedicated physician-scientists and, focusing on fertility, genetics and stem cells in a wide range of advanced therapeutic applications. Brilliant course participants included trainees, scientists and clinicians from the Greater Middle East. The lectures and practical sessions, presented by internationally acknowledged scientists, included over-

views of recent achievements in pluripotent stem cell research, emphasizing the role of both the embryonic (ES) and induced pluripotent stem (iPS) cells. A major emphasis was placed on the clinical achievements in germ cell and umbilical cord stem cell transplantation issues, and on the potential of fast and successful prenatal and pre-implantation molecular genetics diagnostics. The organization of the stem cell course in the Holy Land especially emphasized that issues of “eternal life” and “rejuvenation” are already at hand—at least in the pluripotent stem cell research field. In the lively atmosphere of the course about 60 participants had heated discussions on the possibility and ethics of advanced prenatal diagnostics, and on regulatory issues reflecting the need of separation of clinically effective versus unapproved, unwarranted stem cell treatments. An open discussion of many ethical issues, reflecting profound differences in religion and medical tradition in the different countries, made this course exceptionally interesting for both teachers and trainees.

Keywords Stem cells · Middle East · International · Science Diplomacy · Jordan · Induced Pluripotency · Germ cells · Global cooperation · Education · Training · PGD · Fertility · Genetics

Drs. Sarkadi and Schatten are the Vice-President and President of the International Cell Research Organization (ICRO), respectively. The authors declare no potential conflicts of interest.

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In the middle of a wide-spread unrest in the Arab world, this April 2011, the capital of Jordan, Amman, hosted an international advanced course and workshop on “Frontiers in Human Pluripotent Stem Cells” and an International Congress on Fertility and Genetics (<http://www.fertigen.com.jo/ConferenceDetails.aspx>)

Fig. 1 Opening Session of the JORDIAN SOCIETY FOR FERTILITY AND GENETICS Congress and Commencement for the Stem Cell Workshop. High Royal Highness Princess Basma Bint Talal of Jordan (Center). Dr. Zaid Kilani is directly to her right and the authors (B.S.; 3rd right and G.S.; her left) are also in this figure together with many of the speakers

com.jo/ConferenceDetails.aspx). The aim of the advanced training course, organized by the International Cell Research Organization (ICRO), and the Jordanian Society of Fertility and Genetics, was to attract students and clinicians from the neighboring countries and demonstrate the fantastic recent achievements in the area of stem cell research. The lectures and practical sessions, presented by internationally acknowledged scientists, included overviews of recent achievements in pluripotent stem cell research, emphasizing the role of both the embryonic (ES) and induced pluripotent stem (iPS) cells. A major emphasis was placed on the clinical achievements in germ cell and umbilical cord stem cell transplantation issues, and on the potential of fast and successful prenatal and pre-implantation molecular genetic diagnostics.

The recently “rejuvenated” ICRO, with its half-century tradition of educating and mentoring promising young scientists with outstanding advanced training courses in the developing world, assured a high quality of this event. Participation of local and international speakers and live laboratory demonstrations made the course a temporary center of advanced clinical technologies. Course and Congress participants came from throughout the Greater Middle East, including Bahrain, Egypt, Iran, Iran, Libya, the Palestinian Territories, Syria and, of course, our host country, the Hashemite Kingdom

of Jordan. The organization of the stem cell course in the Holy Land especially emphasized that issues of “eternal life” and “rejuvenation” are already at hand—at least in the pluripotent stem cell research field.

In the lively atmosphere of the course about 60 participants had heated discussions on the possibility and ethics of advanced prenatal diagnostics, and on regulatory issues reflecting the need of separation of clinically effective versus unapproved, unwarranted stem cell treatments. An open discussion of many ethical issues, reflecting profound differences in religion and medical tradition in the different countries, made this course exceptionally interesting for both teachers and students. Dr. Zaid Kilani, the Congress President, together with Dr. Abdel Latif Abu Khadra, President of the Jordanian society for Fertility and Genetics, Dr. Rana Dajani of the Hashemite University of Jordan, and their Organizing Committee proved to be an excellent organizers and dedicated physician-scientists and, focusing on fertility, genetics and stem cells in a wide range of advanced therapeutic applications.

The International Congress, closely attached to the advanced course, brought both scientific events to a magnificent social gathering. The Congress was opened by Jordanian Princess H.R.H. Basma Bint Talal, the late King Hussein’s sister and King Abdullah’s Aunt (Fig. 1). To a great joy of the guest scholars, she gave an excellent free talk in English on the need of modern biological science to flourish even further in the Muslim world, so well known about its eminent classical scholars. She especially emphasized the need for modern medicine in the area of fertility, thus liberating women and promoting their health at this part of the world as well. As we learned later, in fact, at the time of need she went to the Mayo clinic to donate her bone marrow for King Hussein’s stem cell therapy.

Course organizers noted that it is rare in the Middle East to have in depth training courses and this gave the participants the flavor of how investigations are conducted in the United States and Europe as well as opening new horizons and opportunities to speak with internationally renowned scientists. In addition to the many physician-scientists in the workshop and congress, there were about a dozen fundamental doctoral trainees in the course and perhaps twice that number in the Congress.

Culture, art—and as we believe—science could easily bring together people even with widely different views and ambitions, and thus may make this troubled part of the world a new melting pot of scientific achievements and advanced medical technologies.

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Appendix

International Cell Research Organization (ICRO) proudly announces a new laboratory course entitled:

FRONTIERS IN HUMAN PLURIPOTENT STEM CELLS

Amman JORDAN April 20–23, 2011

Under the Auspices of the:

JORDANIAN SOCIETY FOR FERTILITY AND GENETICS AND THE FARAH HOSPITAL

Organized by: Abdel Latif Abu Khadra, MD (Jordan); Rana Dajani, PhD (Jordan); Zaid Kilani, MD (Jordan); Maya Mitalipova, PhD (USA, Kazakhstan); Gerald Schatten, PhD (USA)

Advisory Committee: H. Baharvand PhD (Iran), P. Braude MD (UK), H. Gourabi PhD (Iran), F. Kilani, MD (Jordan), S. Kilani MD (Jordan), J. Pruszek MD (Germany, USA), M. Sarhan, MD (Jordan), P. Schlegel MD (USA), S. Schlatt PhD (Germany), J. Shay PhD (USA)

Patient-Specific Disease-Expressing Pluripotent Stem Cells for Medical Discoveries

8:30 AM	Welcome and Introduction
8:45 AM	Pluripotent Stem Cells—G. Schatten
9 AM	Lab Demo: Culture, passaging and characterizations – C. Simerly, C. Easley
9:45	Marcus Hughes, MD, PhD (US) Stem Cells and PGD Frontiers
10:45	Patient-Specific PSCs Established by Induced Pluripotency Lab Demo: PSC derivations by iPS; Chas Easley, C. Simerly
1:00 PM	Clinical Observations on Therapeutic Opportunities in Male infertility- Peter Schlegel, MD
1:20	Lab Demo: Male Germ Cell Transplantation - Stefan Schlatt, Dr. rer. nat.
3 PM	Neuroprogenitors from PSCs—Jan Pruszek, MD Lab Demo: Neuroprogenitor differentiation
3:40 PM	Challenges and Opportunities iPSCs for Clinical Introduction; B. Sarkadi (Hungary)
4 PM	Umbilical Cord Stem Cell Transplantation—Mahmoud Sarhan, MD
4:20 PM	Cancer Stem Cells—Jerry Shay, PhD

THURSDAY

I	REPRODUCTIVE SURGERY		
	TITLE	SPEAKER	COUNTRY
9:00–9:30	Endometrioma and IVF: to touch or not to touch	Juan Garcia-Velasco	Spain
9:30–10:00	The long term effects of electrocautery of the ovaries in PCOS	Fulco Van Der Veen	Netherland
10:00–10:30	Embryo transfer can we improve it?	Rene Frydman	France
10:30–11:00	Coffee break		
II	KEYNOTE LECTURES		
	TITLE	SPEAKER	COUNTRY
11:00–11:45	Progesterone induced blood flow in improving pregnancy outcome	Salim Daya	Canada
11:45–12:30	Modern ART in today's society	Jurgis Gedis Grudzinskas	UK
12:30–2:00	Lunch break session: Hot controversial Topics in ART		
III	MALE INFERTILITY		
	TITLE	SPEAKER	COUNTRY
2:00–2:30	What's new with diagnosing sperm defects?	Christopher Barratt	UK
2:30–3:00	Non-obstructive azoospermia: Evolution of treatment	Peter Schlegel	USA
3:00–3:30	Repeated micro-dissection TESE: is there a limit?	Abdel Latif Abu Khadra	Jordan
3:30–4:00	Coffee break		
IV	REPRODUCTIVE GENETICS		
	TITLE	SPEAKER	COUNTRY
4:00–4:30	Clinical aspects of globozoospermia	Christopher Barratt	UK
4:30–5:00	Genetics of infertility : how to clone human genes solely involved in infertility phenotype	Stephane Vivilli	France
5:00–5:30	What have stem cells taught us about early human embryology	Peter Braude	UK

FRIDAY

V	INFERTILITY MANAGEMENT		
	TITLE	SPEAKER	COUNTRY
9:00–9:30	The pros and cons of IUI	Willem Ombelet	Belgium
9:30–10:00	GnRH antagonists are safer than agonists	Hesham Al Inany	Egypt
10:00–10:30	OHSS risk reduction/prevention in ART	Peter Humaidan	Denmark
10:30–11:00	Coffee break		
VI	KEYNOTE LECTURES		
	TITLE	SPEAKER	COUNTRY
11:00–11:45	Managing male infertility in the 21st century: Optimizing diagnostic and treatments by mechanistic understandings and avoiding intractable male infertility	Gerald Schatten	USA
11:45–12:30	Preimplantation Genetics in 2011: The Promise and The Controversies	Mark Hughes	USA
12:30–2:30	Lunch break		
VII	IVF LAB		
	TITLE	SPEAKER	COUNTRY
2:30–3:00	New developments on sperm selection for ICSI	Willem Ombelet	Belgium
3:00–3:30	Objective markers of oocyte and embryo viability	Marcos Meseguer	Spain
3:30–4:00	Impact of lifestyle factors and antioxidative treatment on sperm analysis results (WHO AND MSOME criteria)	Johannes Wogatzky	Austria
4:00–4:30	Coffee break		
VIII	CLINICAL ART		
	TITLE	SPEAKER	COUNTRY
4:30–5:00	Evidenced based management of poor ovarian response	Stratis Kolibianakis	Greece
5:00–5:30	“Single Embryo Transfer: The way ahead?”	Peter Brinsden	UK
5:30–6:00	closing remarks	Peter Brinsden	UK