



Review and recap of the Midwest Reproductive Symposium International: learning tool for continuing medical education for reproductive endocrinologists, geneticists, embryologists, mental health, and other infertility providers

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Received: 31 August 2018 / Accepted: 7 September 2018 / Published online: 27 September 2018
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Abstract

Conferences serve an essential means of learning and staying up to date in all aspects of medicine. Reproductive endocrinology and infertility is a young and constantly evolving field. The Midwest Reproductive Symposium International (MRSi) is a yearly conference held in Chicago, IL, and is one of the most intimate yet influential conferences in the fertility world. This conference is geared towards all professions and roles in the fertility world such as physicians, geneticists, nurses, allied health professionals, basic scientists, mental health professionals, business administration professionals, reproductive endocrinology and infertility fellows, and obstetrics and gynecology residents alike. The goal of MRSi is to continue to understand this revolutionary field in order to improve patient outcomes while staying up to date with the latest technology.

Keywords Reproductive endocrine · Infertility · Genetics · Continued medical education · In vitro fertilization · Technology · PGT-A

National and international meetings serve as tools to gain access to and learn about innovative technology while interacting with colleagues and leaders in the field. One of the most intimate yet influential conferences in the fertility world is the Midwest Reproductive Symposium International (MRSi), a yearly conference held in Chicago, IL. This conference is geared towards all professions and roles in the fertility world such as physicians, geneticists, nurses, allied health professionals, basic scientists, mental health professionals, business administration professionals, reproductive endocrinology and infertility (REI) fellows, and obstetrics and gynecology residents alike.

This year's conference started with the celebration of the world's first IVF baby, Louise Brown's 40th birthday celebration. She attended the conference with Dr. Peter Brinsden who was part of her parent's IVF team. Fertility clinics and specialists from all over the world made videos that were played throughout the night to wish Louise an early start to an incredible birthday. The conference commenced with a robust scientific conference agenda; the sessions were targeted for all audiences including nurses, mental health professionals, and REI fellows. Due to the innovative and constant growth in this field, it remains essential for clinicians to stay well informed and up to date to cutting edge technology and optimal treatment protocols for patients. The goal of MRSi is to understand and improve this field to improve patient outcomes.

The 3-day MRSi program consisted of a mix of lectures, panel discussions, and interactive workshops. It offered attendees a unique opportunity to network with colleagues and exhibitors in casual and formal educational settings and to share knowledge and experiences in several rapidly advancing fields within reproductive medicine. Participants also had the opportunity to attend specialized programming in their area of interest. The main MRSi Scientific Session: The founding pillar of MRSi was the 2-day main session which was focused

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on sharing knowledge, best practices, and advancements in reproductive medicine, by some of the brightest and innovative thought leaders in our field. There was an open debate on to preimplantation genetic testing for aneuploidy (PGT-A) or not between Dr. Richard Scott and Dr. Richard Paulson, followed by Dr. Bruce Shapiro on how to optimize implantation in a frozen embryo transfer (FET) cycle. The learning objectives were to describe the limitations and knowledge gaps of PGT-A and understand the challenges and what is the appropriate application of this technology. Despite the fact that PGT-A has been around for decades, the role of testing continues to evolve and remains up for debate making conferences such as these essential [1, 2]. Dr. Shapiro reinforced with factors that improve outcome of FET including verification and freeze all blastocysts. There is a nationwide trend towards FET as there are reduced risks of OHSS, low birth weight (<2500 g), small for gestational age (SGA), preterm LBW, preterm delivery, placenta previa, and perinatal mortality, while having a slightly higher success rate [3]. Methods to improve to frozen embryo transfer success rates were explored and explained by Dr. Bruce Shapiro. Dr. Nathan Treff reviewed mosaicism from the laboratory perspective and its utility in determining whether an embryo is recommended for transfer. Drs. Adamson, Treff, and Kearns conducted a workshop on the clinical components of what should go into the decision process when considering the transfer of a mosaic embryo and concluded that more discussion and scientific evidence are required before mosaic embryos should be considered for transfer.

This lecture was complemented by Dr. Angeline Beltsos' lecture on when is the uterine lining optimal for transfer. Often time when an embryo fails to implant, it remains unknown whether it was due to the embryo or the endometrial lining itself. If it was a PGT-A normal tested embryo, often times, it was assumed that the lining was not receptive, therefore failed implantation. It is astonishing that about 40% of high-grade euploid embryos fail to implant which leads us to investigate endometrial receptivity and its role in pregnancy outcomes [4]. Currently, this can be tested by two methods to assess endometrial receptivity via either the RNA-seq approach examining 236 genes or the original custom DNA microarray examining 238 genes [4].

Dr. Peter Nagy reviewed the current recommendations for oocyte vitrification. He described how we have come a long way; before we needed about 100 eggs to equal one pregnancy, however currently with vitrification, four to five eggs equal one pregnancy. In addition, he covered the challenges of now having all this viable tissue for storage including space, transferring of samples, and maintenance and monitoring of the tanks. As awareness increases, oocyte vitrification is increasing in popularity with both social egg freezing and oncofertility arenas [5].

In the days prior to the scientific program, there were focused group sessions for all the targeted attendees. The nurse practicum serves as one of the only nursing education opportunities offered in the USA today focusing on nursing and fertility; the nurse practicum is a program specifically designed for nurses by nurses that is an integral part of the MRSi conference. MRSi also has a Business Minds Program, which is an educational platform created for reproductive medical professionals to gather and discuss innovative trends and thought-provoking concepts within the business world of reproductive medicine; it remains integral to tie these fields together. There is also a unique opportunity for the residents and fellows, with the REI Fellows Program. Dr. Cedars lectured on the importance of mentorship and using a mentor throughout a medical career to grow as a clinician and researcher. A panel of physicians discussed with the young physicians' questions regarding jobs and where to practice ranging from academic, group, and solo private practice. Lisa Duran and Adrian Elorza BBA met the fellows and residents to discuss how to market themselves and how to negotiate a contract. These residents and fellows also shared their research to the medical professionals attending the conference during an evening poster session. The winning abstract was presented as an oral presentation among the leaders in the field. In addition, there was a mental health day: a captivating forum that brings together experts of the mental health profession and reproductive medicine colleagues for an open discussion on how to counsel patients who face difficult decisions. This served as an exclusive occasion to share challenges and explore strategies to improve patient care. Lastly, there was the CEO Summit dinner meeting, which allowed an opportunity for only the top business leaders to collaborate on timely issues. Dr. Ali Domar discussed the emotional aspect of infertility and its implications on all aspects of the patient's life and the role of the app, FertiCalm. The importance of mental health and fertility and the correlation between the two were discussed in great detail, as it is well known that the anxiety and depression scores of women with infertility are similar to those who have the diagnosis of cancer [6]. Topics that day ranged from the business aspect, such as how to retain patients and how to deliver exceptional care by understanding yourself better using Meyers-Briggs.

Such conferences remain an integral part of our continued medical education and a way to foster and probe young minds. It is essential that these discussions happen frequently, and there is an avenue for providers to sit and discuss the science behind clinical decisions. Conference attendance is a valuable experience for practitioners and a way to ensure practice up to date evidence-based medicine.

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