



Center For Advanced Fetal Care Newsletter

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Snowflakes...

... Beauty. Fragility. Intricacy. The snowflake embodies them all. Ever so transient in existence; ever so impactful. Oftentimes the most minute and that which is under the greatest threat of extinction leaves the most transformational imprint...

CFAFC just celebrated its 8th anniversary on February 24: such a short existence, nearing its extinction, but hopefully one that shall leave an enduring effect on all the caretakers, mothers, fetuses and families involved. We thus dedicate this issue to the snowflake, a threatened masterpiece, **sculpted by nature**, with the ability to survive in only the harshest conditions. Our world is at a time of incredible **scientific triumph**, amassing knowledge and securing **advancement** as a result of dedicated human **talent**, boundless human **endurance** and global collaboration. Our discipline is replete with examples of exemplary educators, healers and researchers who confront resilience and disappointment with endurance and perseverance as they continue to tirelessly present us with more solutions and management options. We thus present to you "snowflakes" that shall transform our practice: Abuhamad et al's latest milestone in ultrasound education in Ob/Gyn, Romero et al's meta-analysis addressing the role of progesterone in the prevention of preterm birth and De Groote et al's study on the outcome of congenital heart defects. We summarize for you the FMF's and SMFM's latest meetings on maternal and fetal medicine. We share with you upcoming courses around the world where you will have the chance to meet and exchange ideas with the leaders in our field including the first ISUOG-Approved ultrasound course to be held in Lebanon. We sincerely hope that with this issue, your vigilance for the "snowflake" and the excitement and promise that it brings, despite its threatened existence, is heightened, allowing you to take in its beauty, fragility and **intricacy** in order to **rewrite the stars...**



Snowflakes

Vaginal Progesterone in Singletons with Short Cervix

From Romero et al comes the recently published meta-analysis of individual patient data in **AJOG** on the role of vaginal progesterone for preventing preterm birth and adverse perinatal outcomes in singleton gestations with a short cervix. This systemic review and meta-analysis was carried out on randomized



controlled trials using vaginal progesterone versus placebo or no treatment in patients with singleton gestations and a sonographic midtrimester cervix of ≤ 25 mm. The primary study outcome was preterm birth at less than 33 weeks. The secondary outcome was adverse neurodevelopmental and perinatal outcome at 2 years of age. The meta-analysis included 5 high-quality trials with 974 patients. Of those, 498 received vaginal progesterone and 476 were in the no treatment/placebo group. There was a significant decrease in the rate of preterm birth in the treated group ($p=0.0006$). There was also decrease in the preterm birth and spontaneous preterm birth at various gestations in the treatment group resulting in a significant decrease in respiratory distress syndrome, admission to the neonatal intensive care unit and composite neonatal morbidity and mortality. In addition, there was no deleterious effect of vaginal progesterone in the treated group with respect to adverse maternal effects, congenital malformations or perinatal adverse effects and neurodevelopmental delay at 2 years. The authors conclude that vaginal progesterone is efficacious and safe.

Outcome After Diagnosis of Congenital Heart Defects

From De Groote et al comes the recent retrospective study, published in **PD**, and carried out between 2006 and 2014 on patients with pre- and post-natally diagnosed congenital heart defects. The main aim of the study was to determine the prenatal detection and mortality rates as well as the incidence of genetic abnormalities. The study included 567 patients of whom only 31% were prenatally diagnosed. The most prevalent defects were coarctation of the aorta in 24%, tetralogy of Fallot in 21% and univentricular heart in 19%. There was a 40% termination rate, and 15% of the patients opted for post-natal compassionate care. The overall mortality rate was 30%, and it was 12% in those who underwent surgery. As to the association with genetic disorders, only 70% of cases underwent genetic testing and of those tested, 36% had an underlying genetic disorder, and this group had a statistically higher mortality rate when compared to fetuses with normal or no genetic testing ($p=0.002$). The authors' findings highlight our suboptimal prenatal detection rates of congenital heart defects and the impact of co-existing genetic abnormalities on survival. The study findings will aid in the counselling of future affected families.



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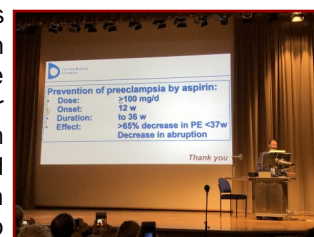
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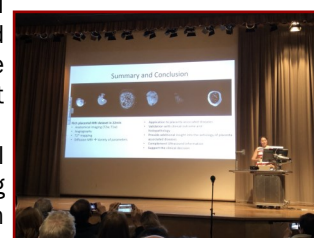
Highlights from the Fetal Medicine Foundation's Advances Course Held on December 2 - 3, 2017 in London, United Kingdom. By Salma Jabak, MD

Again and again the **"Advances in Fetal Medicine"** course bewildered with the newest innovations in the field. This year's course took place 2-3 December 2017. The first day commenced with Professor Nicolaides presenting the results of the ASPRE trial. The trial resulted in a 62% decrease in preterm pre-eclampsia in the intervention group versus placebo. The high risk population for this study underwent screening in the first trimester using uterine artery pulsatility index, mean arterial BP, PAPP-A and PIGF. Subsequently, Min Yi presented the SPREE findings which reinforced the fact that employing the first trimester FMF algorithm for screening for PE (using a combination of maternal factors, mean arterial BP, uterine artery pulsatility index and PIGF) is by far superior to the methods recommended by NICE and ACOG. The morning session concluded with Ritsuko Pooh's review of the use of fetal MRI/CT and neurosonography in cranial and extra cranial anomalies. The afternoon sessions was given by Adriana Aquiese and Aly Youssef. They addressed two key areas with the first being the use of cfDNA in screening for fetal aneuploidies, and the second being the role of transperineal ultrasound on the labor ward and how it may effect instrumental deliveries.

Day two commenced with a lecture highlighting the role of the 36 week scan to ascertain fetal presentation, placental position, amniotic fluid index, estimated fetal weight and late-appearing abnormalities of the fetal CNS and skeleton. This was followed by a very controversial lecture given by Jacques Jani who introduced the notion of using MRI for fetal weight estimation. Subsequently Ranjit Akolekar discussed the implications and management of large for gestational age babies and how difficult it is to make an informed decision with the current existing guidelines. An inspiring lecture was then given by Peter von Dadelszen on precision medicine and global health. As is customary, the course included a session dedicated to fetal echocardiography presented by brilliant pediatric cardiologists at the forefront of which are John Simpson, Vita Zidere, Marietta Charakida and Trisha Vigneswaran. In addition, there were interesting presentations on preterm birth and the preventative role of an abdominal cerclage. Maternal disease also took center stage with detailed discussions of maternal hypertension with the new classifications, in addition to thyroid and neurological diseases. The course concluded with a presentation of the upcoming FMF trial: the Statin Trial. Visit the **FMF Website** for updates on future courses.



Prof. Nicolaides



Prof. Hutter



The Audience

Highlights from the Pregnancy Meeting for the Society of Maternal Fetal Medicine Held January 29 - February 3, 2018 in Dallas, Texas

The **Pregnancy Meeting** of the **SMFM** was held in Dallas, Texas to an attendance of over 2000 delegates who came from across the globe. The meeting commenced with several pre-convention courses covering such various topics as genetic diseases, obstetric critical care, controversies in maternal medical management, post-partum hemorrhage, substance use disorders in pregnancy, the pregnant cardiac patient, debates on pregnancy complications, simulation courses on obstetric complications and ultrasound-guided invasive procedures, evidence-based fetal interventions, treatment of opioid disorders, pre-term birth and labor management, cervical length and education review program (CLEAR) and finally a workshop by the African Coalition for Excellence in Obstetric and Neonatal Care.

Ultrasound had its share this year with 2 pre-congress courses. The first was "Gyn Ultraound for the MFM", co-directed by J. Dicke and I. Timor. This was a comprehensive course addressing all gynecologic conditions that may affect the pregnant patient: from abdominopelvic pain, to adnexal masses, uterine anomalies, pregnancies of unusual locations, uterine conditions, cancer in pregnancy and alternate imaging techniques.

The second was a live-streamed joint SMFM-ISUOG course entitled "Fetal Echocardiography with First Trimester Anatomic Survey". The course was co-directed by J. Copel, L. Goncalves and L. Simpson and featured outstanding speakers such as A. Abuhamad, T. Anton, B. Bromley, L. Goncalves, J. Copel, M. Norton and L. Simpson who gave comprehensive presentations with beautiful sonographic images and illustrations on cardiac screening and its various components, in addition to the up-and-coming role of the first trimester anatomic survey in the era of cfDNA. The full-day course concluded with a "test your diagnostic skill" quiz of cases for the attendees which was given by L. Simpson.

As usual, there was cutting edge research from around the world with outstanding oral and poster abstract presentations. Several plenary session videos may be accessed at the **SMFM Website** in addition to the abstract book from **AJOG**. Stay tuned to the **SMFM Website** for updates on next year's meeting to be held in Las Vegas.



T. Anton, RDMS



M. Norton, MD

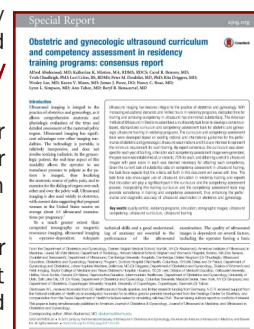
CFAFC Recommends: Obstetric & Gynecologic Ultrasound Curriculum and Competency Assessment in Residency Training Programs: Consensus Report.

Brilliantly conceived and executed, the "Obstetric and Gynecologic Ultrasound Curriculum and Competency Assessment in Residency Training Programs: A Consensus Report" with its Appendix has finally been published simultaneously in the AIUM's **Journal of Ultrasound in Medicine**, ISUOG's **Ultrasound in Obstetrics and Gynecology** and SMFM's **American Journal of Obstetrics and Gynecology**.

This was the result of the diligent work of the **AIUM**-assembled multi-society Task Force commissioned by Professor Benacerraf and headed by Professor Abuhamad to put together the much-needed standardized curriculum for Ob/Gyn ultrasound training to be used by residents and sonologists of various backgrounds who are involved in Ob/Gyn scanning.

The curriculum encompasses both theoretical and practical requirements and details them per post-graduate year affording flexibility in changing/mixing according to the needs at hand, and the time availability. What is most unique about the curriculum is the Appendix which in reality is a mini-atlas that illustrates all the required competencies with beautifully labelled images and itemized criteria to be met in order to pass the competency. Accompanying the curriculum is the **AIUM Ultrasound Lecture Series**. The lecture series was headed by Professor Lee and is made up of 32 open-access recorded lectures prepared and presented by leaders in the field. The lecture series covers all the various components of the curriculum where each lecture has an accompanying pre- and post-test as well as a PDF compilation of the slide-set.

CFAFC highly recommends this masterpiece: a milestone in Ob/Gyn Ultrasound Education!



THIS AND THAT

Upcoming AIUM



With a newly redesigned convention, the **AIUM** returns to vibrant New York March 24-28, 2018 for its annual convention packed with learning labs, meet-the-professor sessions and cutting edge research in ultrasound across the disciplines. This year, there will be 2 pre-convention courses dedicated to the first trimester scan and to a practical approach to training and clinical practice in Ob/Gyn ultrasound. Details at the **AIUM Website**.

FMF Abstract Submission



Registration and abstract submission are now open for the **FMF's** 17th World Congress. The meeting will be held in Athens June 24-28, 2018. Delegates should be prepared for the long packed days where the global leaders in fetal medicine gather for an open 5 day discussion on the most pressing issues in fetal medicine. There is an unforgettable social agenda as well. To submit an abstract and register, visit the **FMF Congress Website**.

ISUOG Abstract Submission



ISUOG is travelling to Singapore for its 28th World Congress October 20 - 24, 2018. Abstract submission is open through April 9. The meeting will feature 3 pre-congress courses: an ISUOG BT course; a course on deep infiltrating endometriosis and another on the essentials of genetics in clinical obstetric practice. In addition, there will be workshops, live-scan demonstrations and meet-the-professor sessions. Details at the **ISUOG Website**.

Upcoming ISPD



The **ISPD** is planning its 22nd International Conference on Prenatal Diagnosis and Therapy for July 8-11, 2018 in Antwerp, Belgium. The program will feature 8 pre-conference courses in addition to a rich program where the latest in prenatal diagnosis will be presented by luminaries in the field. Details on the program and registration information is available at the **ISPD Website**.

Upcoming Cairo Course



The **19th Annual Conference** of the Dept. of Ob/Gyn at Cairo University is planned for March 22 - 23, 2018. The course will feature world renowned speakers including Prof. Nicolaides, Chaoui, Jani, Visser and Youssef and several local distinguished faculty. In addition, there will be a pre-congress workshop on placenta accrete. Details at the **Congress Website**.

CFAFC News



CFAFC's Reem S. Abu-Rustum is honored at having been appointed as a member of the **SMFM's** Education and Global Health Committees. She is grateful for having had the opportunity to present the **ISUOG BT Program** at the African Coalition for Excellence in Obstetric and Neonatal Care at the **SMFM Annual Meeting** in Dallas, Tx. She also had the privilege of serving as an editor for the newly released **AIUM OBGYN Ultrasound Lecture Series** where she gave the lecture on the "First Trimester Anatomic Survey".

Save-the-Date: First ISUOG-Approved Course in Lebanon!

It is with much excitement that **SANA** Medical NGO and **Aboujaoude Hospital** announce the first **ISUOG-approved** ultrasound course in Lebanon. "Advances in Ultrasound in Obstetrics and Gynecology" is planned with the support of ISUOG and in collaboration with **LSOG**. The course features world renowned Professor Alfred Abuhamad, Professor Katia Bilardo and Professor Gerry Visser and covers the latest in Ob/Gyn ultrasound. This will be with the local participation of several speakers: Imad Aboujaoude, Reem S. Abu-Rustum, Linda Daou and Nabil Helou.



The course commences with a session on the first trimester covering an enlarged NT in early gestation, the importance of the midsagittal plane, cardiac screening, and cesarean scar pregnancy. There will be a "just images" presentation on fetal malformations.

Subsequently, there will be several presentations on the role of ultrasound in the second and third trimesters covering such topics as echogenic bowel, screening for congenital heart disease, case presentations on congenital heart defects, the approach to the fetal venous system and the most recent ISUOG Guidelines for twins. The latest on growth reference charts, fetal growth restriction and prevention of preterm birth will be addressed. Finally, the Lebanon experience with the imaging of placenta accrete will be presented as well.

The course concludes with a session on gynecology addressing the role of 2D and 3D ultrasound in the evaluation of the uterus and a comprehensive presentation on adnexal masses: from the simple to the very complex.

There will be a unique opportunity to meet our international experts and interact with them in the beautiful setting of Le Royal Hotel in Dbayeh.

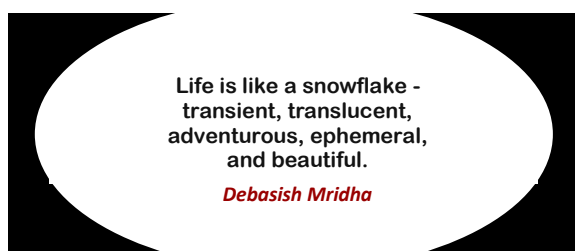
The course will be held May 11-12, 2018. Seats are limited and registration is encouraged. The course brochure with further details is available at **SANA Medical NGO**.



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CFAFC expresses its sincerest appreciation to Drs. Raia Doumit, Ahmad El-Sheikhah, Nabil Helou and Salma Jabak for their contributions to this issue, and to the AIUM for the inspiration. For any interesting cases, suggestions or announcements, please send an e-mail to rar@cfafc.org.



Kindly note that all colored text contains embedded "clickable" links.

Upcoming Congresses

COURSE TITLE	DATES	LOCATION	WEBSITE ADDRESS
26th Congress of the European Board and College of Obstetrics and Gynecology	Mar 8 - 10, 2018	Paris, France	http://www.ebcog2018.org
OBFEGYN	Mar 16 - 17, 2018	Dubai, UAE	http://obfegyn.org/introduction.php
19th Annual Conference of the Dept. of Ob/Gyn - Cairo University	Mar 22 - 23, 2018	Cairo, Egypt	http://www.cairoobgynconference.com
Annual Convention of the American Institute of Ultrasound in Medicine	Mar 24 - 28, 2018	New York, NY	https://www.eventscribe.com/2018/AIUM/
FIGO Regional Congress of Middle East and Africa	Apr 11 - 13, 2018	Dubai, UAE	https://www.figo.org/upcoming-figo-regional-congress
ISUOG International Symposium	Apr 20 - 22, 2018	Athens, Greece	http://www.isuogsymposium2018.com
Advances in Ultrasound in Obstetrics & Gynecology	May 11 - 12, 2018	Dbayeh, Lebnon	http://www.sanango.org
Advances in First Trimester Ultrasound	May 31 - Jun 1, 2018	Las Vegas, NV	http://www.edusymp.com/product/details/1038
Effective Prenatal Screening of Congenital Heart Disease	June 1 - 3, 2018	London, UK	https://www.isuog.org/event/effective-prenatal-screening-of-congenital-heart-disease-1.html
17th World Congress of the Fetal Medicine Foundation	Jun 24 - 28, 2018	Athens, Greece	https://fetalmedicine.org/fmf-world-congress

Prenatal Diagnosis of Fetal Arthrogryposis by Raia Doumit, MD and Nabil Helou MD

A 22-year-old G2P1001 presented for a second opinion at 32W1D. Prior medical and family histories were negative. This was a consanguineous couple.

The transabdominal scan revealed polyhydramnios and fetal biometry consistent with gestational age. This was a male fetus with no movement and bilateral club feet (Figure 1). Fixed extended lower limbs were noted (Figure 2), and there was flexion contracture at the hips and elbows. Fetal calves demonstrated no curvature suggestive of muscle atrophy. The head examination was difficult due to fetal position but revealed ventriculomegaly of 16 mm. The cerebellum couldn't be assessed. Other findings included a thick umbilical cord. The findings were consistent with fetal arthrogryposis which was later confirmed (Figure 3).



Figure 1

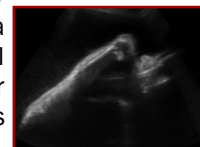


Figure 2



Figure 3

Fetuses normally demonstrate a relaxed position and have regular movements. Abnormal positioning with scant or absent motion of the fetal extremities, as in our case, is suggestive of arthrogryposis. Arthrogryposis Multiplex Congenital (AMC) is a group of muscular, neurologic and connective tissue disorders characterized by multiple severe joint contractures and decreased fetal mobility. It has an incidence of 1/3000 lb, with multiple etiologies, syndromic or nonsyndromic. Sonographic findings of arthrogryposis may not become evident until after 16-18 weeks', making prenatal diagnosis difficult. It has a poor prognosis, mostly depending on the severity of associated anomalies.