



# Center For Advanced Fetal Care Newsletter

Volume 8 Issue 2  
Spring of 2017  
Tripoli - Lebanon

## INSIDE THIS ISSUE

Nirvana...	1
Progesterone in Twins	1
US Pre-cfDNA 10-14 Weeks	1
Highlights AIUM	2
Highlights Dubai OBFEGYN	2
CFAFC Recommends	3
Upcoming FMF Congress	3
Upcoming ISUOG Activities	3
Upcoming WCUME	3
New App from Lebanon	3
CFAFC News	3
Hot-off-the-Press	3
Featured Case	4
Featured Quote	4
Upcoming Courses	4

## Nirvana...

...**Ecstasy**. Serenity. Tranquility. It is that moment in time when all else becomes obsolete... We weather life's challenges propelled by such a sense of longing and yearning for perfection, relentlessly chasing after that stolen moment in time when we may **soar** to unfathomable heights... There is much agony all around us making our every glimpse of **Nirvana** passionately emblazoned in our minds. Rapid advances in **information technology** are bringing us closer and closer to flawlessness. We have consecrated our collective knowledge to look **beyond** the confinements of earth, pulled by the lure and mystery of the unknown in search of bliss. We thus dedicate this issue to "Nirvana", that transiently-attainable state of higher being. We present to you the latest from the American Institute of Ultrasound in Medicine's annual convention which is dedicated to ultrasonography, the most precise portable **celestial** diagnostic modality. We bring you the latest textbooks on evidence-based guidelines in obstetrics and maternal-fetal medicine. We review the latest meta-analysis on combatting the morbidities of preterm birth in twins. We discuss the critical role of the 11-14 week scan in the era of cfDNA and the importance of delving into the hidden markers of the mid-sagittal view of the fetus for the early detection of anomalies. We announce the latest App from Lebanon in addition to our usual quarterly features. We hope that this issue serves as **pixie-dust** bringing you closer in **time** to your Nirvana...



Dream Theory by Archan Nair

## Editor-in-Chief

Reem S. Abu-Rustum, MD  
Center For Advanced Fetal Care  
rar@cfafc.org

## Issue Contributors

Jose El Asmar, MS4  
jme18@mail.aub.edu  
Firas Farhat, MD  
firas.farhat.1990@live.com

Jihad Feghaly, MD  
Feghaly@yahoo.fr

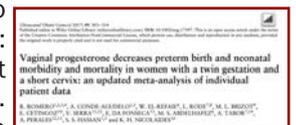
Nabil Helou, MD  
helounrs@gmail.com

Afshin PourMirza, MD  
afshin@fetalmedicine.ae

Mark Sklansky, MD  
msklansky@mednet.ucla.edu

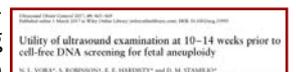
## Vaginal Progesterone in Twins: A Meta-Analysis

For years, we have heard from the leaders in the field that there really is no evidence in support of any preventative measure for preterm birth in twins: not progesterone, nor a cerclage/pessary is of benefit. However, the most recent meta-analysis from Romero et al in **UOG** is challenging this teaching. In this patient-level meta-analysis, Romero et al sought to assess the efficacy of vaginal progesterone in the prevention of preterm birth in asymptomatic women with a twin gestation and a cervical length of < 25 mm at mid-gestation. The authors evaluated a total of 6 studies which included 159 mothers with twin gestations randomized to vaginal progesterone, and 144 mothers who were randomized to placebo or no treatment. Roughly a third of patients, in both arms, had a cervical length of < 20mm at randomization. The study found that in asymptomatic women with a short cervix, vaginal progesterone reduced the incidence of preterm birth by 31% and neonatal death by 47%. In addition, there were no adverse effects reported. As such, the authors conclude that progesterone seems to be of benefit in asymptomatic women with a twin gestation and a short cervix, however large prospective studies are needed prior to global implementation.



## Utility of Ultrasound Before cfDNA Testing at 10-14 Weeks

NT screening has given us worldwide access to 70-85% of women at 11-14 weeks. This is critical not only for screening for aneuploidy, but for carrying out a full fetal anatomic assessment, ascertaining chorionicity in multiple gestation, screening for preeclampsia... The availability of cfDNA testing is leading to a decline in the number of patients presenting for the 11-14 week scan, a matter that shall translate into false reassurances and delayed diagnoses of many major fetal malformations. From Vora et al comes this important retrospective study, published in **UOG**, where the authors sought to assess the frequency of unexpected sonographic findings at 10-14 weeks, and pre-cfDNA testing, that would alter prenatal management. The study included 2337 AMA women with 2462 fetuses in whom the scan identified 2.9% with a fetal anomaly, 6.5% with a non-viable fetus, 1.4% with twins and 5.4% with incorrect dating. As a result of the significant portion of patients with sonographic findings that impact clinical management, the authors recommend that patients undergo a scan prior to cfDNA testing.



## Highlights from the Annual Convention of the AIUM Held March 25 - 29, 2017 at the Swan & Dolphin Resort in Orlando, USA

It was back to Orlando that over 1200 health care providers, from all disciplines and with various backgrounds, gathered for 5 intense days to exchange that latest in ultrasound. As always, what distinguishes the **AIUM Annual Convention** from other meetings is that it gives a chance for physicians, sonographers and students, in 19 communities of practice, the chance to meet and learn from each other in the friendliest of settings.

This year, SonoSlam was a sell out with medical students from 26 universities competing for the "Peter Arger Cup". The winners were the team from Ohio State University. There were several ongoing pre-conventions as well, one which covered scanning the fetus "From Head-to-Toe" and another dedicated to fetal intervention in collaboration with **NAFTNet**.

A late breaking research session preceded the opening plenary and it was given by Anthony Odibo, MD. He discussed Romero et al's recent publication addressing the role of progesterone in twin gestation in the presence of a short cervix. It was a most timely and stimulating discussion.

The plenary session, led by AIUM President Beryl Benacerraf, was phenomenal with director of NIAID, Anthony Fauci, MD, giving a fabulous video lecture on Zika. The new AIUM Competency Curriculum in Ob/Gyn Ultrasound and Lecture Series was presented by Alfred Abuhamad, MD. The meeting had over 500 ePosters and multiple abstract-presentation sessions. In addition, there were various courses covering all aspects of sonography. In the obstetrical realm, there were comprehensive sessions addressing such topics as fetal growth, fetal infection, utility of Doppler in the at-risk pregnancy, the 11-14 week anatomic scan, fetal neurosonography, twin gestation, safety concerns, the morbidly adherent placenta, sonographic findings in common aneuploidies, skeletal dysplasias, evaluation of the fetal face, the fetal GU, chest and thorax and finally NIPT: current and future trends. The fetal echocardiography tract was most interesting as well covering all aspects of imaging the fetal heart: from early gestation onwards, from the basic to the most advanced.

Lebanon was well represented with 2 major presentations and 6 abstracts the result of collaborative work between Drs. Reem Abu-Rustum, Jose El Asmar, Rayan Ghanem, Ibrahim Ghosn, Nabil Helou, Siba Khaled, Eliza Nelson and Fouad Ziade.

Mark your calendars for the 2018 convention coming to New York March 24-28, 2018. For details, visit the **AIUM website**.



A. Odibo, MD



B. Bromley, MD

## Highlights from the Seventh International Congress of Obstetrics, Fetal Medicine and Gynecology Held February 24 - 25, 2017 in Dubai, UAE

Indeed, the **7th International Congress of Obstetrics, Fetal Medicine and Gynecology** "Evolving Standards" did set the standard with a most distinguished program given by world-renowned faculty at the forefront of whom were Drs. Katia Bilardo, Francesca Grati, Philippe Jeanty, Karim Kalache, Leona Poon, Suresh Seshadri and Gerald Visser under the direction of Dr. Afshin PourMirza. The congress was supported by the **Fetal Medicine Foundation** and approved by **ISUOG**.

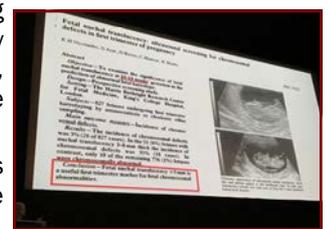
The congress covered all key areas on women's and fetal health: from fetal medicine to obstetrics and gynecology. There were 2 outstanding workshops given by Dr. Philippe Jeanty in which he covered various aspects of obstetrical sonography. The first workshop addressed machine settings, image optimization, pitfalls and artifacts. In addition, the basic approach to examining the fetal heart was presented with beautiful schematics. The second workshop was highly interactive. It started with a presentation on facial clefts and continued on with a series of case presentations where audience participation was sought to determine the correct diagnosis in challenging fetal conditions. It was most instructive and informative.

Concurrently, the scientific session were ongoing. Day 1 covered several main topics. Fetal evaluation at 11-14 weeks was covered extensively in the wake of cfDNA testing. Preterm birth, with its complications and potential preventative measures, was addressed. In addition, there was a special session dedicated to maternal conditions complicating pregnancy.

Day 2 commenced with the newest guidelines from ISUOG on twins, management of TTTS, DiGeorge syndrome, the role of fetal MRI and the ground-breaking soon-to-be-published results of the ASPRE study. There were several presentations addressing information technology and how it may facilitate the exchange of knowledge in our daily clinical practice.

Lebanon was well represented with 3 major presentations and 4 abstracts the result of collaborative work between Drs. Sameer and Reem Abu-Rustum, Linda Daou and Fouad Ziade.

Stay tuned for details on next year's congress which should also be held in Dubai and promises to build on the success of the prior 7 congresses...

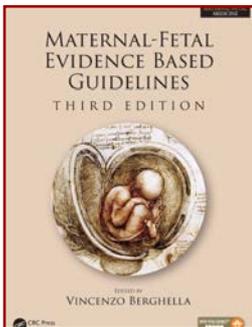


K. Bilardo, MD



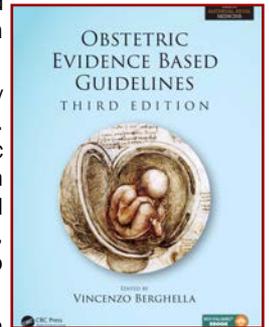
L. Poon, MD

## CFAFC Recommends Berghella's Maternal-Fetal and Obstetric Evidence Based Guidelines - Third Edition



The 4th edition of Berghella's duo **Maternal-Fetal Evidence Based Guidelines** and **Obstetric Evidence Based Guidelines** have been released. They are **available** both in a print version as well as in digital formats on **CRC Press** and **Amazon**.

Maternal-Fetal Evidence Based Guidelines is made up of 58 chapters, authored by leaders in the field, that address every imaginable aspect of maternal-fetal medicine. From maternal medical disorders such as cardiovascular, endocrinologic, hematologic and infectious to psychiatric, post trauma and spinal cord injury, post transplantation and infectious among many others, each chapter commences with key points and definitions, epidemiology, major pregnancy considerations, principles, management, therapy and counseling where applicable. There is ample use of summary tables to highlight the most clinically-impacting points.



Obstetric Evidence Based Guidelines is made up of 33 chapters that concentrate on the main constituents of prenatal, intrapartum and postpartum care. There is a wealth of information in the respective chapters on the role of ultrasound, prenatal diagnosis and carrier screening. Management of labor, analgesia and anesthesia as well as operative delivery are covered. In addition, there are dedicated chapters to recurrent pregnancy loss, preterm labor and various obstetrical complications. The text ends with 2 chapters on adnexal masses and cervical screening and management in pregnancy.

Truly encyclopedic, CFAFC highly recommends this invaluable duo to all who may be involved in obstetrical and fetal care...



### Upcoming FMF



Abstract submission is now open for the **16th World Congress** of the **FMF** through April 30, 2017. The congress returns to picturesque Ljubljana June 25-29 in Slovenia. Attendees can rest assured that they shall participate in one of the most exciting congresses covering all aspects of fetal medicine in a stimulating environment with constant ongoing debates between the experts. For more details, visit the **FMF Website**.

### Upcoming ISUOG Activities



**ISUOG** has several educational activities planned prior to the World Congress starting with "21st Century Endometriosis Imaging Modalities for Surgical Planning" at the 13th World Congress on Endometriosis in May 17 in Vancouver. ISUOG will be also be present at the **EBCOG**, May 17-21, with 2 masterclasses and a live-streamed Basic Training Course on "Fetal Growth" in Antalya. Further details at the **ISUOG Website**.

### Upcoming WCUME



The **5th World Congress on Ultrasound in Medical Education** is planned for October 12-15 in Montreal Canada. As has become customary, there will be the annual competition "World Cup" in addition to several workshops, plenaries and abstract presentations from around the world. This congress will unite the elite in medical education as they share the newest trends in the latest revolution in medical education. Details at the **WCUME Website**.

### New App From Lebanon



It is with pride that we announce "iPee" a new free App from Lebanon developed by Jose El Asmar MS4 at **AUBMC**. iPee was designed to facilitate the evaluation of urine severity symptoms that so many of our post-partum patients suffer from. It is intended to replace the IPSS score form with a user-friendly model accessible to all in order to objectively and accurately quantify the problem. CFAFC highly recommends this App!

### CFAFC News



It has been an eventful few months for **CFAFC's** Reem S. Abu-Rustum. She has been named Chair of **ISUOG's Basic Training Task Force**, Co-Chair of the **AIUM Annual Convention Committee**, and a member of the ISUOG/FIGO Collaboration Steering Group. She was honored to have been invited as a speaker to the AIUM Annual Convention in Orlando and the 7th International Conference on Obstetrics, Fetal Medicine and Gynaecology in Dubai. Her recent work "**The 3-Sweep Approach For Fetal Anatomic Assessment in the Outreach Setting**" was published in **JOFM**.

### Hot-Off-The-Press: FT Choroid Plexus of the 4th Ventricle



A most interesting study from Martinez-Ten on the first trimester choroid plexus of the 4th ventricle (CP-IVV) has been published in **UOG**. In their study, the authors prospectively analyzed 3D volume datasets from 65 normal fetuses and compared them to 27 retrospective cases of fetuses with posterior fossa abnormalities for the presence of the CP-IVV in both midsagittal and axial planes. The aim was to determine whether the presence/absence of the CP-IVV is a reliable predictor of posterior fossa abnormalities and chromosomal aberrations. This was subsequently correlated with findings on the second trimester scan, MRI, post-mortem studies and post-natal findings, where applicable.

The CP-IVV was identified in 64 cases and was absent in 28. In 12/28 (43%) of fetuses with absent CP-IVV there were CNS abnormalities: 6 with open spina bifida, 2 with Dandy-Walker malformation, 2 with Blake's pouch cyst, 1 with megacisterna magna and 1 with a cephalocele. In addition, 20/28 (87%) had chromosomal aberrations: 10 with trisomy 18, 5 with triploidy, 3 with trisomy 13, 1 with 45,X and 1 with trisomy 21. There was one false positive case with a normal fetus and no CP-IVV.

The authors conclude that visualization of the CP-IVV is a simple, qualitative and reproducible marker at 10-14 weeks in the prediction of CNS abnormalities and chromosomal aberrations. (Figure: mid-sagittal plane of a normal 12w5d fetus in which the NT is measured. In this plane, the NB, palate (P), mandible (MN), thalamus (T), sphenoid bone (solid black line), midbrain (M), brain stem (BS), medulla oblongata (MO), fourth ventricle/intracranial translucency (IT), choroid plexus of the IT (\*), cisterna magna (CM), the occipital bone (dotted line) and NT are seen.



## Center For Advanced Fetal Care

Najah Center 1st Floor  
Aasheer Al Dayeh Street  
Tripoli - Lebanon  
Cell +96170236648

CFAFC expresses its sincerest appreciation to all of our contributors. For any interesting case reports, comments, suggestions or any special announcements, please send an e-mail to [rar@cfafc.org](mailto:rar@cfafc.org).

“All the joys in the worlds of all beings who have ever been or will ever be, will never equal the perfection of one moment of absorption into the stillness of nirvana.”

*Frederick Lenz*

Kindly note that all colored text contains embedded '[clickable](#)' links.

## Upcoming Congresses

COURSE TITLE	DATES	LOCATION	WEBSITE ADDRESS
25th European Congress of Obstetrics and Gynecology	May 17 - 21, 2017	Antalya, Turkey	<a href="http://www.ebcog2017.org">http://www.ebcog2017.org</a>
16th World Congress of the Fetal Medicine Foundation Medicine	Jun 25 - 29, 2017	Ljubljana, Slovenia	<a href="https://fetalmedicine.org/fmf-world-congress">https://fetalmedicine.org/fmf-world-congress</a>
21st International Conference on Prenatal Diagnosis and Therapy	Jul 9 - 12, 2017	San Diego, CA	<a href="http://www.ispdhome.org/ISPD2017">http://www.ispdhome.org/ISPD2017</a>
2nd Annual Fetal Symposium on the Fetal Brain	Aug 24 - 25, 2017	Washington, DC	<a href="http://www.fetalbrainsymposium.com">http://www.fetalbrainsymposium.com</a>
Fetal and Women's Imaging: Advanced Ob-Gyn Ultrasound	Sep 8 - 10, 2017	Seattle, WA	<a href="http://www.worldclasscme.com/conferences/fetal-and-womens-imaging-advanced-ob-gyn-ultrasound2/">http://www.worldclasscme.com/conferences/fetal-and-womens-imaging-advanced-ob-gyn-ultrasound2/</a>
27th World Congress on Ultrasound in Obstetrics and Gynecology	Sep 16 - 19, 2017	Vienna, Austria	<a href="http://www.isuog.org/WorldCongress/2017">http://www.isuog.org/WorldCongress/2017</a>
6th International Conference on Fetal Growth	Sep 20 - 22, 2017	Cork, Ireland	<a href="http://www.fetalgrowth.org">http://www.fetalgrowth.org</a>
8th Annual Fetal Echocardiography: Normal and Abnormal Hearts	Oct 5 - 7, 2017	Las Vegas, NV	<a href="http://www.edusymp.com/product/details/999">http://www.edusymp.com/product/details/999</a>
7th Annual Fetal Echocardiography Symposium at UCLA	Oct 21, 2017	Los Angeles, CA	<a href="http://www.cme.ucla.edu/courses/event-description?registration_id=169414">http://www.cme.ucla.edu/courses/event-description?registration_id=169414</a>
The 8th Phoenix Fetal Cardiology Symposium	Oct 27 - 31, 2017	Phoenix, AZ	<a href="http://www.fetalcardio.com">http://www.fetalcardio.com</a>

## Prenatal Diagnosis of Fetal CMV Infection at 21W4D. By Drs. F. Farhat, J. Fegahly and N. Helou

A 35-year-old G2 P1001 presented for a second opinion at 21w4d of gestation. Prior medical and family histories were negative. A transabdominal scan was performed and revealed a male fetus with mild ventriculomegaly at 11 mm (\*Figure 1), cerebellar hypoplasia, partial vermian agenesis, abdominal ascites and hyperechogenic bowel (Figure 2). The peak systolic velocity of the MCA was 77 cm/s (Figure 3), which together with the enlarged placenta (5 cm), indicated fetal anemia. The findings were consistent with an infectious etiology, and the main differential diagnosis was congenital cytomegalovirus (CMV) infection, which was confirmed by an amniocentesis and viral load PCR. Findings and prognosis were discussed with the family and they elected to continue the pregnancy.



Figure 1



Figure 2



Figure 3

CMV is the most common congenital viral infection, with a birth prevalence of about 0.5%. In pregnant women, it is classified as either primary, if the initial acquisition of virus occurs during pregnancy, or non-primary (recurrent or secondary), if maternal antibodies to CMV were present prior to conception. It may also be due to reactivation of latent virus or reinfection with a new strain. The rate of seroconversion during pregnancy ranges from 1 to 7%, and is highest in households with young children in daycare centers. In our case, the CMV serology revealed negative IgM but high positive IgG titers, suggestive of primary infection early in pregnancy.

Maternal transmission to the fetus is most common following primary maternal infection and occurs in up to 1/3 of cases. In non-primary infection, the rate of fetal transmission is much lower (0.2 to 2%). Although perinatal transmission may increase as gestation advances, sequelae in offspring appear to be less severe the later in gestation the transmission occurs.

Primary CMV infection in a pregnant woman may cause a mild febrile illness and other nonspecific symptoms, but is not clinically apparent in 90% of cases. Most newborns of women with primary CMV infection, and almost all newborns of women with non-primary infection, are initially asymptomatic. Approximately 5 to 20% of newborns of mothers with primary CMV infection, and about 1% of those with non-primary infection, are symptomatic at birth.

Seroconversion of CMV-specific IgG is diagnostic of a new acute infection. Presence of CMV IgM is not helpful for timing the onset of infection, however determination of IgG avidity is useful: high avidity (>65%) suggests that the primary infection occurred more than 6 months ago; low avidity (<30%) suggests a recent primary infection (within the past 2 to 4 months). Amniocentesis and PCR for CMV DNA in amniotic fluid is the preferred diagnostic approach for identifying an infected fetus, with a sensitivity of 70 to 100%.

Ultrasonographic abnormalities associated with in-utero fetal infection have been reported in fewer than 25% of fetuses infected in the first half of pregnancy. The typical sonographic finding of fetal CMV infection is bilateral periventricular calcifications, but normal ultrasound or even MRI examinations do not completely exclude the possibility of a symptomatic neonate or development of long-term neurological morbidity.