THE UNIVERSITY OF BRITISH COLUMBIA

UBC Obstetrics & Gynaecology

21st Annual Academic Day

Wednesday May 5, 2021

Zoom

Abstract Booklet for Poster Presentations

Wednesday May 5

8:00 – 8:30 **Breakout rooms with Sponsors, Poster Breakout Room**

8:30 – 8:35 **Welcome by Dr Janice Kwon**

Chair, Academic Day Scientific Planning Committee

Introduction of Guest Speaker by Dr. Sarah Finlayson

8:35 – 9:30 **2021 Leanne Dahlgren-Scott Memorial Lecture**

Title: "Racism in Medicine"

Keynote Speaker - **Dr. Modupe Tunde-Byass**, Assistant Professor University of Toronto

9:30 – 10:05 **Trainee presentations (Paper Session)**

10:05 – 10:15 **Break**

10:15 – 10:45 **Trainee Presentations (Poster Session)**

- ☐ "Prevalence of antiphospholipid syndrome and anti-thrombotic treatment use in a cohort of 1444 patients with recurrent pregnancy loss" – **Allyssa Hooper**
- ☐ "Follicular tracking with ultrasound does not improve pregnancy rates in letrozole-intrauterine insemination (IUI) cycles" – **Kristy Cho**
- ☐ "Economic evaluation of the etonogestrel implant and contraceptive subsidy in preventing unintended pregnancies in British Columbia, Canada" – **Charles Litwin**
- ☐ "Risk of cardiovascular disease among women carrying BRCA mutations

after risk-reducing bilateral salpingo-oophorectomy: a population-based study" - **Helena Abreu do Valle**

- ☐ "Treatment and Survival Outcomes of Recurrent or Metastatic Cervical Cancer in BC" - **Christine Wang**
- ☐ "Temporal trends associated with the utilization of in-vitro fertilization in patients with recurrent pregnancy loss" - **Kristy Cho**
- ☐ "Implications of an isolated low head circumference for longer-term child development" - **Katie McCann**
- ☐ "Laparoscopic Suturing in Gynecologic Surgery: The effect of Port Placement in Simulation Training" - **Tarneer Johal**
- ☐ "Dispensing Mifepristone for medical abortion in Canada: Survey results of Pharmacists' experience" - **Enav Zusman**
- ☐ "Local prognostic factors and outcomes of prenatally diagnosed congenital diaphragmatic hernia" - **James Hayward**
- ☐ "Risk factors for urinary retention after urogynecologic surgery: a retrospective cohort study and prediction model" – **Ethan Zhang**
- ☐ "Laparoscopic Ureteroureterostomy to treat severe ureteral endometriosis" – **Rahana Harjee**

10:45 – 11:15 **Trainee Presentations (Paper Session)**

11:15 – 11:25 **Break**

11:25 – 11:55 **Trainee Presentations (Poster Session)**

- ☐ "Does adding hydrochloroquine to empiric treatment improve the live birth rate in refactory obstetrical antiphospholipid syndrome? "- **Allyssa Hooper**
- ☐ "Does in-vitro fertilization affect interval to delivery in patients with recurrent pregnancy loss?" – **Kristy Cho**
- ☐ "High-risk HPV prevalence among women undergoing cervix screening: findings a decade after HPV vaccine implementation in British Columbia, Canada" – **Charles Litwin**
- ☐ "Establishing obstetrics-specific metrics and interventions for antimicrobial stewardship" – **Jeffrey Wong**
- ☐ "The effect of maternal height and race on perinatal death" – **Lauren Yearwood**
- ☐ "Does a history of recurrent pregnancy loss (RPL) predict a longer

interval to the second live birth or increased adverse perinatal outcomes for women in British Columbia?" – **Kristy Cho**

- ☐ "Making sense of harms and benefits: Assessing the numeric presentation of risk information in ACOG obstetrical clinical practice guidelines" - **Hannah Foggin**
- ☐ "Management and outcomes of cesarean scar defects (CSD) in patients with secondary infertility" – **Rahana Harjee**
- ☐ "Does NIPT detect aneuploidies missed by PGT-A? A case series" – **Rahana Harjee**
- ☐ "Fertility preservation in a transgender man without prolonged discontinuation of testosterone: a case report and literature review" – **Rahana Harjee**
- ☐ "Prevalence and management algorithm of cesarean section scar ectopic pregnancies: a 9-year experience" – **Natasha Simula**

11:55 – 12:25 **Trainee Presentations (Paper Session)**

12:25 – 12:30 **Closing Remarks by Dr. Gavin Stuart**

Head, Department of Obstetrics and Gynaecology

Prevalence of antiphospholipid syndrome and anti-thrombotic treatment use in a cohort of 1444 patients with recurrent pregnancy loss

Hooper, Allyssa; Albert, Arianne; Bedaiwy, Mohamed

BACKGROUND: Antiphospholipid syndrome (APS) is an autoimmune disease characterized by the presence of antiphospholipid antibodies (aPLs) that can result in obstetrical complications including recurrent pregnancy loss (RPL). The aim of this study is to analyze the prevalence of APS and anti-thrombotic treatment in a cohort of RPL patients and to assess ongoing pregnancy beyond 10 weeks' gestation and live birth rate following anti- thrombotictreatment.

METHODS: Retrospective cohort study of 1444 RPL patients from the BC Women's Hospital RPL Clinic. Patients require both clinical and laboratory diagnoses of APS to be eligible for analysis. Clinical diagnosis includes a history of RPL. Laboratory diagnosis includes the presence of one or more aPLs on initial and confirmatory testing 12 weeks later. Eligible aPLs include lupus anticoagulant (LA), anticardiolipin antibody (aCL), anti-beta2glycoprotein (aβ2GPI), and antiphosphatidylserine (aPS).

RESULTS: Of the 1444 charts reviewed, 76 patients (5.19%) tested positive for aPLs including 59 LA, 17 aCL, 13 aβ2GPI, and 6 aPS. 11 patients were double-positive and 3 patients were triple-positive. Of the 76 patients, 39 patients received anti-thrombotic treatment. 17 patients were treated with combination low-dose aspirin (LDA) and low-molecular-weight heparin (LMWH), 13 were treated with LDA alone, 2 treated with LMWH alone, and the remaining 7 patients were treated with a combination of LDA, LMWH, prednisone, and hydroxychloroquine (HCQ).

CONCLUSIONS: 5.19% of patients met the clinical and laboratory criteria for APS diagnosis. 51% of patients received anti-thrombotic or immunomodulatory treatment during pregnancy. Further analysis is to come with regards to pregnancy outcomes following anti-thrombotic treatment.

Follicular tracking with ultrasound does not improve pregnancy rates in letrozole-intrauterine insemination (IUI) cycles

Cho, Kristy; Au, Jason; Sen-Laurenz, Rachel; Albert, Arianne; Havelock, Jon; Dunne, Caitlin

BACKGROUND: The use of letrozole for ovarian stimulation with intrauterine insemination (IUI) has increased in popularity in recent years. However, much of evidence guiding cycle management has been based on clomiphene IUI cycles. This study aims to determine if the probability of pregnancy is associated with ultrasound monitoring or human chorionic gonadotrophin (HCG) trigger in IUI cycles.

METHODS: This retrospective cohort study includes letrozole cycles with IUI performed at two Canadian university-affiliated fertility centers from 2016 to 2019. The patients were divided into 2 groups: ultrasound monitored and unmonitored. The associations between pregnancy rate and ultrasound use, lead follicle size at last ultrasound, or HCG use were determined using logistic regression, Fisher's exact test, or Wilcoxon rank sum test.

RESULTS: Out of the 2678 cycles by 1,397 patients, 351 cycles were ultrasound monitored. The pregnancy rate was 13% per cycle. The cumulative pregnancy rate, up to 6 cycles of IUI, was 56%. Ultrasound monitoring was not associated with increased pregnancy rate ($p= 0.09$). Adjusting for age, BMI, and letrozole regimen, there was no relationship between lead follicle size and the odds of pregnancy (aOR= 0.95, $p= 0.31$). There was no significant difference in the pregnancy rates between those who utilized HCG trigger and those who did not (adjusted $p= 0.54$).

CONCLUSIONS: Overall, this study shows that monitoring with ultrasound did not improve pregnancy rate in patients who underwent letrozole IUI. The resultant decrease in ultrasound monitoring for IUI may reduce cycle costs and clinic visits.

Economic evaluation of the etonogestrel implant and contraceptive subsidy in preventing unintended pregnancies in British Columbia, Canada.

Litwin, Charles; Norman, Wendy

BACKGROUND: In British Columbia, 40% of pregnancies are unintended and less than half of biological females at risk of an unintended pregnancy use highly effective contraceptive methods. The etonogestrel implant is a long-acting reversible contraceptive method recently approved by Health Canada. This analysis explores the cost-effectiveness of the implant in preventing unintended pregnancies in British Columbia, while also evaluating the cost-effectiveness of contraceptive subsidy in the province. The perspective of the Government of British Columbia as the single-payer of the publicly funded health care system is employed.

METHODS: A Markov analytic decision model was used to determine the costs and unintended pregnancies averted associated with the implant compared to other contraceptive methods. Findings are expressed in incremental cost-effectiveness ratios (ICER). A literature review was performed to inform the model parameters. Deterministic and probabilistic sensitivity analyses were conducted to evaluate the uncertainty in the model.

RESULTS: Among 1,000 biological females, direct medical costs were estimated to be CAD 881,960 with 1,080 UP averted by the implant over 5 years. The implant had a probability over 90% of being cost-effective compared to the IUD, DMPA and OCP at a willingness-to-pay threshold of 5,362 $/UP averted. The IUS was the most cost-effective contraceptive method with an ICER of 52,554 $/UP averted when compared to the implant. Contraceptive subsidy was cost-effective with an ICER of 124 $/UP averted. Findings were most sensitive to the cost of birth and to the time horizon.

CONCLUSION: The implant and contraceptive subsidy are cost-effective strategies to prevent unintended pregnancies in British Columbia.

Risk of cardiovascular disease among women carrying BRCA mutations after risk-reducing bilateral salpingo-oophorectomy: a population-based study

Abreu do Valle, Helena; Kaur, Paramdeep; Kwon, Janice; Chiefetz, Rona; Dawson, Lesa; Hanley, Gillian

BACKGROUND: Women carrying BRCA mutations are at high risk for ovarian cancer. For prevention, they are offered a risk-reducing bilateral salpingo-oophorectomy (RRBSO) between the age of 35 and 45 years. The resultant surgical menopause increases the risk of cardiovascular diseases (CVD). It is also hypothesized that BRCA mutations may increase susceptibility to CVD.

METHODS: Using population-based data from British Columbia from 1996 to 2017, we compared the CVD risk among women with BRCA mutations who underwent RRBSO before the age of 50 (n=360) with two age-matched groups without known BRCA mutations: 1) women who underwent bilateral oophorectomy (BO) for benign conditions (n=3600); and, 2) women with intact ovaries (n=3600). Our primary outcome was CVD (myocardial infarction, heart failure, and/or cerebrovascular disease). Secondary outcomes included predisposing conditions (hypertension, dyslipidemia, and/or diabetes mellitus), and use of cardio protective medications (statins and/or beta-blockers).

RESULTS: Compared to women who underwent BO without BRCA mutations, women with BRCA mutations had no significant increased risk for CVD (HR=1.06, 95%CI: 0.71-1.75) and were less likely to be diagnosed with predisposing conditions (HR=0.70, 95%CI: 0.56- 0.86). Compared to women with intact ovaries without BRCA mutations, women with BRCA mutations had increased risk for CVD (HR=1.89, 95%CI: 1.24-2.88), but were less likely to be diagnosed with predisposing conditions (HR=0.79, 95%CI: 0.64-0.98). Women with BRCA mutations were less likely to use cardio protective medications (not significant).

CONCLUSIONS: Our results suggest we can improve prevention of CVD among women with BRCA mutation after RRBSO by optimizing the diagnosis of predisposing conditions and the appropriate use of cardio protective medications.

Treatment and Survival Outcomes of Recurrent or Metastatic Cervical Cancer in BC

Wang, Christine; Lester, Beverly; Huang, Longlong; Sun, Shaun; Ko, Jenny

BACKGROUND: The purpose of this study is to characterize the treatment regimens for women with cervical cancer, characterize their recurrences, and analyze associated survival outcomes.

METHODS: A retrospective chart review of cervical cancer patients in BC during 2010- 2017 was done. Demographic data, treatment details and covariates of prognostic significance were collected.

RESULTS: A total of 780 patients were examined: 52%stage I/II, 25% stage III and 13% stage IV cervical cancer. Treatments included primary resection (18.7%) and radical radiotherapy (82.3%) of which 85% had concurrent chemotherapy. Surgical resection increased overall survival (OS) (median OS 124 months vs. not reached (NR), p<0.0001). 179 women had recurrence (22.9%) compared to 98 (12.6%) with upfront incurable disease. For recurrence/metastases, 7.6% received surgery and 54.5% received systemic therapy. First line carboplatin/paclitaxel/bevacizumab was given in 37.7% and was associated with a better OS compared tocarboplatin/paclitaxel (median OS 22.59 vs. 12.16 months, p=0.00038). No survival difference was seen between adenocarcinoma and squamous carcinoma (p=0.028). Peri-RT chemotherapy was not associated with increased OS, progression free survival (PFS), or cancer specific survival (CSS) in adeno/adenosquamous carcinoma (p=0.084, 0.086, 0.47 respectively).All survival parameters were poorer for p16 negative women compared to p16 unknown/positive (median OS 17.2 months vs NR, p<0.0001; median PFS 10.1 months vs NR, p<0.0001; median CSS 13.7 vs 15.9; p=0.028).

CONCLUSIONS: A significant proportion of women had recurrent disease (22.9%), and while OS improved with the use of first line carboplatin/paclitaxel/bevacizumab, only a small proportion of women with recurrent/metastatic disease received it. Peri-RT chemotherapy does not improve outcomes in patients with localized adeno/adenosquamous carcinoma. P16 negative women have poorer survival compared to p16 positive/unknown.

Temporal trends associated with the utilization of in-vitro fertilization in patients with recurrent pregnancy loss

Cho, Kristy; Albert, Arianne; Fraser Jang-Milligan; Mohamed, Bedaiwy

BACKGROUND: Recurrent pregnancy loss (RPL) is a distressing condition and in-vitro fertilization (IVF) has been utilized in attempt to improve pregnancy outcomes. This study aimed to determine if the proportion of deliveries resulting from IVF was different in patients with RPL and how the uptake has changed over time.

METHODS: This retrospective study included women with a livebirth in 2008-2018 from the British Columbia Perinatal Data Registry (BCPDR). RPL is defined by ≥2 pregnancy losses before 20 weeks gestational age, occurring consecutively or nonconsecutively. The proportion of livebirths after IVF in women with RPL was compared to the proportion in those without RPL over time.

RESULTS: There were 406,191 pregnancies with data regarding IVF utilization between January 2008 and March 2018. The use of IVF was significantly higher in the pregnancies associated with RPL (6.1% vs 3.2%, $P < 0.0001$). Over time, a significant increase in the rate of live birth from IVF was observed only in those with secondary RPL. There was little to no increase in those with primary RPL and those without RPL. Further analysis showed that this increase was most pronounced in those of the secondary RPL group who were ≥40-years-old.

CONCLUSIONS: This provincial database showed that a higher proportion of livebirths conceived via IVF was noted in the RPL population. This has been increasing over time and this trend was most prominent in older patients with secondary RPL. However, our data cannot determine if the increase is patient-driven or due to improved success with IVF.

Implications of an isolated low head circumference for longer-term child development

McCann, Catharine; Liauw, Jessica; Mayer, Chantal; Albert, Arianne; Hutcheon, Jennifer

BACKGROUND: Microcephaly, small head size at birth, is often linked to developmental delays, particularly when other anomalies are present. Our aim was to examine kindergarten-age development of children with prenatally diagnosed isolated low HC (no other anomalies).

METHODS: Singleton pregnancies ≥20 weeks gestation receiving an outpatient ultrasound from 2000-2011 were included. Fetuses with an isolated low HC ≤ -3SD on the INTERGROWTH 21st chart were stratified by gestational age (early onset: 20+0-23+6 weeks; late onset: 24+0-35+6 weeks), and compared to fetuses with normal head and abdominal circumferences. Pregnancies were linked with their kindergarten Early Development Instrument (EDI), available for one third of births in British Columbia (3 year testing cycles), to compare the incidence of developmental vulnerabilities and total EDI scores.

RESULTS: 107 fetuses with early onset and 89 fetuses with late onset low HC were identified and compared to 4669 and 8207 normocephalic fetuses, respectively. Children with low prenatal HCs had similar rates of developmental vulnerabilities as children with normal HCs (early onset 5.6 excess cases /100 births [95% CI -12.6 - 23.7] and late onset 3.4 excess cases /100 births [95% CI -14.7 - 21.5]). Children with low prenatal HCs also had similar total EDI scores compared to children with a normal HC (early onset mean score 39.8 [IQR 32.7-44.5] vs normal 41.7 [35.2-46.1], and late onset mean score 40.5 [IQR 33.4-45.7] vs normal 41.4 [35.2-46.1]).

CONCLUSIONS: Children with an isolated low fetal head circumference have similar school readiness scores and developmental vulnerabilities compared to normocephalic children.

Laparoscopic Suturing in Gynecologic Surgery: The effect of Port Placement in Simulation Training

Johal, Tarneer; Dineley, Brigid; Storness-Bliss, Claudine; Mehra, Neeraj

BACKGROUND: Simulation box trainers are set up with contralateral port placement to facilitate learning, whereas ipsilateral port placement is most commonly used for gynecologic surgery when teaching intracorporeal knot tying on a box trainer, will simulation training using ipsilateral port placement, compared to contralateral port placement, result in improved skill translation on a simulated vaginal cuff closure model?

METHODS: Residents in OBGYN were randomized to learn on box trainers, with either contralateral or ipsilateral port placement. Intracorporeal knot tying skills were evaluated on a simulator, designed to mimic vaginal cuff closure in the operating rom. The primary outcome was competence at intracorporeal knot tying.

RESULTS: Seventeen residents were enrolled and randomly assigned into each group. There were no differences in demographics, prior surgical training, or prior knowledge of laparoscopic surgery. Although no statistical significance was found in scores between groups, the scores of the ipsilateral group were higher than those in the contralateral group in both evaluation sessions.

CONCLUSIONS: The scores of the ipsilateral group were higher than the contralateral group in both evaluation sessions, which is consistent with our hypothesis. The absence of statistical significance can in part, be explained by the small sample size and subsequent lack of power. Further research involving gynecological laparoscopy training is required.

Dispensing Mifepristone for Medical Abortion in Canada: Survey Results of Pharmacists' Experiences

Zusman, Enav; Munro, Sarah; Norman, Wendy; Soon, Judith

BACKGROUND: Mifegymiso, a medical abortion medication, became available on the Canadian market in 2017 and is now dispensed in community pharmacies. Our study aimed to assess the availability of the medication in community pharmacies, the frequency that medical abortion medications were being prescribed, and pharmacists' experiences with dispensing the medications.

METHODS: We surveyed pharmacists from across Canada. We summarized categorical data using counts and proportions and conducted a qualitative thematic analysis for our open-ended questions.

RESULTS: We collected survey results from 125 pharmacists. Approximately half of the pharmacists reported that their pharmacy routinely stocked Mifegymiso. The estimated mean (SD) number of Mifegymiso prescriptions filled in the previous 12 months was 25.58 (85.70). Reported benefits of making Mifegymiso available in Canadian pharmacies were: increased accessibility for women and couples (118, 94.4%), reduced pressure on the healthcare system (107, 85.60%), increased accessibility in rural and remote areas (106, 84.80%) and increased interprofessional collaborations (49, 39.20%). Reported challenges for maintaining an adequate stock of Mifegymiso at the pharmacy included low demand for the drug (25, 20.00%); short expiry dating (20, 16.00%), cost of purchasing the medication (9, 7.20%) and drug shortage (8, 6.40%). The overwhelming majority of participants (98.82%) reported that their communities reacted positively to the provision of Mifegymiso by their pharmacy.

CONCLUSIONS: Pharmacists are enthusiastic about providing patients in their communities with convenient access to Mifegymiso. An increase in mifepristone accessibility has the potential to enhance interprofessional collaboration by facilitating complementary physician-pharmacist counselling.

Local prognostic factors and outcomes of prenatally diagnosed congenital diaphragmatic hernia.

Hayward, James; Mayer, Chantal

BACKGROUND: Congenital Diaphragmatic Hernia (CDH) is a congenital birth defect affecting approximately 1 per 5,000 births. Prognosis can be predicted by ultrasound measurement of a Lung-Head Ratio (LHR) to determine a severity category. MRI is beginning to be used as a potentially superior alternative. Our goal was to compare local ultrasound and MRI results and evaluate which, if either, was superior.

METHODS: Congenital Diaphragmatic Hernia (CDH) is a congenital birth defect affecting approximately 1 per 5,000 births. Prognosis can be predicted by ultrasound measurement of a Lung-Head Ratio (LHR) to determine a severity category. MRI is beginning to be used as a potentially superior alternative. Our goal was to compare local ultrasound and MRI results and evaluate which, if either, was superior.

RESULTS: 24 cases were identified. 9 families chose to terminate the pregnancy. Among 15 continuing pregnancies, neonatal data were available for 10 cases. All survived to discharge. Neither ultrasound nor MRI reliably predicted neonatal complications.

CONCLUSIONS: Over the study period, every child with CDH who was treated at our centre survived. We therefore could not assess our ability to predict survival. Among our small series, right-sided CDH or left sided CDH with liver in the chest were associated with neonatal complications. Neither ultrasound nor MRI severity score predicted newborn outcomes. Families who choose to continue may be counselled that locally, survival rates are excellent.

Risk factors for urinary retention after urogynecologic surgery: a retrospective cohort study and prediction model

Zhang, Bei Yuan (Ethan); Wong, Jeffrey Man Hay; Koenig, Nicole; Lee, Terry; Geoffrion, Roxana

BACKGROUND: Postoperative urinary retention (POUR) is a common complication of urogynecological surgery. Our study aimed to identify demographic and peri-operative risk factors to construct a prediction model for POUR in urogynecology.

METHODS: Our retrospective cohort study reviewed all patients undergoing pelvic reconstructive surgeries at our tertiary care center (Jan 1, 2013 - May 1, 2019). Demographic, pre-, intra- and post-operative variables were collected from medical records. The primary outcome was POUR defined as 1) early POUR (E-POUR), failing initial trial of void (TOV) or; 2) late POUR (L-POUR), requiring an indwelling catheter or intermittent catheterization on discharge. Risk factors were identified through univariate and multivariate logistic regression analyses. A clinical prediction model was constructed with the most significant and clinically relevant risk factors.

RESULTS: In 501 women, 182 (36.3%) had E-POUR and 61 of these women (12.2% of the entire cohort) had L-POUR. Multivariate logistic regression revealed preoperative postvoid residual (PVR) over 200 ml (OR 3.17, p=0.026), voiding dysfunction symptoms extracted from validated questionnaires (OR 3.00, p=0.030), and number of concomitant procedures (OR 1.30 per procedure, p=0.021) as significant predictors of E-POUR; preoperative PVR>200 mL (OR 4.07, p=0.011) and anti-incontinence procedure with (OR 3.34, p=0.023) and without (OR 2.64, p=0.019) concomitant prolapse repair as significant predictors of L-POUR. A prediction model (AUC 0.70) was developed for E-POUR.

CONCLUSIONS: Elevated preoperative PVR is the most significant risk factor for POUR. Alongside other risk factors, our prediction model for POUR can be used for patient counselling and surgical planning in urogynecologic surgery.

Laparoscopic Ureteroureterostomy to Treat Severe Ureteral Endometriosis

Harjee, Rahana; Wu, Christopher; Suen, Michael

BACKGROUND: Deeply infiltrating endometriosis can involve numerous structures, including the bladder and ureters. A 29-year-old G0 was referred to Urology with right sided flank pain, with a past history of surgically-excised endometriosis. Imaging showed a

6.6 cm right adnexal mass, with proximal hydroureter and hydronephrosis. A multi-disciplinary surgical approach was planned with Urology and Gynecology.

METHODS: This educational video demonstrates the steps for a laparoscopic ureteroureterostomy for ureteric obstruction and highlights the advantages of a multi- disciplinary approach. Excision of endometriosis was initially performed, which included superficial endometriosis, a rectovaginal nodule and endometrioma cystectomy. Complete ureteric stricture due to endometriosis was confirmed; a laparoscopic ureteroureterostomy was performed, with closure

RESULTS: Her post-operative recovery was uncomplicated, and follow-up imaging and ureteroscopy showed decreased hydroureter, and no evidence of obstruction.

CONCLUSIONS: This video demonstrates the surgical steps and collaborative surgical decision-making during a complicated case.

VIDEO LINK: https://youtu.be/eFzM_yZ-qo0

Does adding hydroxychloroquine to empiric treatment improve the live birth rate in refractory obstetrical antiphospholipid syndrome?

Hooper, Allyssa; Albert, Arianne; Bedaiwy, Mohamed

BACKGROUND: Antiphospholipid syndrome (APS) is an autoimmune disease where antiphospholipid antibodies (aPLs) can result in obstetrical complications. 20-30% of patients experience refractory obstetrical APS following empiric therapy. Hydroxychloroquine (HCQ) has been shown to decrease thrombosis risk and minimize destructive effects of aPLs, therefore may be an effective therapy for refractory APS.

METHODS: A systematic literature search using EMBASE, MEDLINE, PubMed, Cochrane Library, and Web of Science was performed from inception to April 2020. The primary outcomes of interest were live birth rate (LBR) and pregnancy loss (PL).

RESULTS: The search produced a total of 479 results. Following PRISMA guidelines, 15 studies were selected for qualitative analysis. Due to the limited number of retrospective studies and high level of heterogeneity, a meta-analysis was not possible. LBR was significantly improved in 3 retrospective studies. Addition of 400mg HCQ improved LBR from 29% to 86% ($p<0.0001$) (Mekinian, 2017) and from 57.1% to 66.7% ($p<0.05$) (Sciascia, 2016). PL percentage was significantly reduced in 4 retrospective studies. Addition of 400mg HCQ reduced PL from 81% to 19% ($p<0.05$) (Mekinian, 2015), from 76% to 14% ($p<0.0001$) (Mekinian, 2017), and from 22.7% to 11.1% ($p=0.012$) (Ye, 2017).

CONCLUSIONS: There are no RCTs to evaluate the impact of HCQ on LBR in patients with APS. Retrospective studies demonstrated that HCQ may be an effective treatment in patients with refractory obstetrical APS, however, RCTs that standardize patient selection criteria and explicitly analyze the use of HCQ as a refractory APS treatment are needed.

Does in-vitro fertilization affect interval to deliveryin patients with recurrent pregnancy loss?

Cho, Kristy; Albert, Arianne; Fraser Jang-Milligan; Mohamed Bedaiwy

BACKGROUND: This study aimed to contrast the interval to second livebirth in patients with recurrent pregnancy loss (RPL) who required IVF with those who conceived spontaneously.

METHODS: This retrospective study included women with live birth in 2008-2018 from the British Columbia Perinatal Data Registry (BCPDR). RPL is defined by =/>2 pregnancy losses before 20 weeks gestational age, consecutively or nonconsecutively. The cohort of RPL patients with 2 recorded livebirths and were nulliparous at first delivery were identified. The time interval was compared using a log-logistic survival model, controlling for factors such as age, BMI, city of residence, and number of miscarriages.

RESULTS: There were 9503 pregnancies in RPL patients with 2 recorded deliveries; 4% of which utilized IVF to conceive the second pregnancy. In the unadjusted analysis, the duration from first delivery to second birth was significantly longer in those who required IVF compared to those who conceived spontaneously, 4.1 compared to 3.7 years respectively (P=<0.0002). After adjusting for confounders, those who required IVF had a longer interval to second birth among younger women, but this difference was attenuated among older women.

CONCLUSIONS: IVF use was associated with similar time to second delivery compared to spontaneous conception in RPL patients =/>35 years old. However, younger women using IVF had a longer inter-delivery interval, likely related to differences in underlying fertility concerns/planning. This epidemiological finding is useful as a counselling tool to reassure older patients who require IVF that the time to next birth, if successful, does not appear to be increased.

High-risk HPV prevalence among women undergoing cervix screening: Findings a decade after HPV vaccine implementation in British Columbia, Canada

Litwin, Charles; Smith, Laurie; Donken, Robine; Krajden, Mel; Dirk van Niekerk1,3, Naus, Monika; Cook, Darrel; Albert, Arianne; Ogilvie, Gina

Background: In British Columbia, a publicly funded, school-based human papilloma virus (HPV) immunization program commenced in 2008 with the quadrivalent vaccine, for females born in 1994 or later in Grades 6 and 9. In 2010/2011, a baseline evaluation of HPV prevalence was conducted among women undergoing cervix screening. After 10 years of HPV vaccination, HPV-type prevalence was re-evaluated.

Methods: From August 2017 to March 2018, 1107 physicians were invited to return cytobrushes used during routine Pap screening for HPV type-specific testing. Specimens were screened for high-risk HPV (hrHPV) using Roche cobas 4800® HPV DNA Test identifying 14 hrHPV types. Other-hrHPV (OHR) positives were genotyped using Roche Linear Array. HPV type prevalence was compared for females 15-22yrs and 23+yrs (eligibility for the HPV vaccination program) between 2010/2011 and 2017/2018.

Results: There were 3309 valid samples received for testing; of these, 3107 had age available, 202 were missing age. For those 15-22yrs, HPV16 and 18 prevalence in 2010/11 was 8.8% and 3.7% respectively and in 2017/18 was 6.3% and 0% respectively; in those 23+, HPV16 and 18 prevalence in 2010/11 was 2.0% and 0.7% respectively and in 2017/18, 2.4% and 1.0% respectively. For OHR types, some decreased, some increased. For all hrHPV types, there were no statistically significant differences between the 2010/11 and 2017/18 periods.

Conclusions: In women eligible for school-based HPV immunization, HPV16 and 18 prevalence rates have decreased since implementation of the public program. In screened women not eligible for publicly funded HPV vaccination, no decrease in HPV16/18 was observed.

Establishing obstetrics-specific metrics and interventions for antimicrobial stewardship

Wong, Jeffrey Man Hay; Wooding, Denise; Leung, Sarah; Paquette, Vanessa; Roberts, Ashley; Elwood, Chelsea

BACKGROUND: While antimicrobial use in obstetrics is increasing, there is limited application of antimicrobial stewardship (AMS) metrics and interventions in this population. Our study aims to establish baseline AMS metrics and apply AMS interventions in our obstetrical centre.

METHODS: From October 2018 to 2019, our tertiary-care obstetrical centre developed an AMS program, which included: 1) surveillance of antimicrobial consumption, 2) point prevalence surveys (PPS), and 3) prospective audit and feedback. We obtained antimicrobial consumption data, defined as length of therapy (LOT), from the pharmacy database. Our AMS pharmacist conducted PPS on all inpatient antimicrobial use. For non- protocolized inpatient antimicrobials, our pharmacist audited the order and provided feedback to clinicians when inappropriate.

RESULTS: During the study period, the LOT for all antimicrobials was 12 days per 100 patient-days. Antimicrobials with the greatest LOT were erythromycin (2.33), amoxicillin (2.28), ampicillin (1.81), and metronidazole (1.74). From eight days of PPS data, 11.2% prescriptions were deemed inappropriate, where non-protocolized indications were 3.07 times more likely to be inappropriate (95% CI: 1.15 to 8.17; $p = 0.027$) compared to protocolized indications. From 565 audited prescriptions, 110 (19.5%) resulted in feedback, where 90% of recommendations were accepted. The most common antimicrobials requiring interventions (denoted as number/100 workdays) were 1st generation cephalosporins (18), metronidazole (18), and 3rd generation cephalosporins (8).

CONCLUSIONS: The use of antimicrobials in obstetrical inpatients is unique. Antimicrobial stewardship interventions including protocolization of antibiotics, point prevalence surveys, and prospective audit and feedback are feasible options to improve antimicrobial prescribing patterns in obstetrics.

The effect of maternal height and race on perinatal death

Yearwood, Lauren

BACKGROUND: To examine the association between maternal stature, race, and perinatal death because the effect of maternal height on perinatal death, independent of pre-pregnancy body-mass-index (BMI), is understudied, including potential differences by race.

METHODS: We conducted a retrospective cohort study using data on all singleton births in the USA, 2016-2017 (N= 7,361,713) from the National Center for Health Statistics. Race categories included non-Hispanic white, African-American, American Indian/Alaskan Native, Asian/Pacific Islander, and Hispanic. Short and tall stature were defined as <10th and >90th centile of maternal height distribution (<154.9 cm and >172.7 cm, respectively). Logistic regression was used to obtain adjusted odds ratios (AOR) and 95% confidence intervals (CI), adjusted for age, type of medical insurance, BMI, education and other risk factors.

RESULTS: Perinatal mortality per 1000 total births was 8.58 in short women, 7.66 in tall women, and 7.60 in women of average stature. Race modified the effect of short stature. Non-Hispanic white women of short stature had higher perinatal mortality (AOR=1.24, 95% CI: 1.14-1.36) compared to average stature women. This association was attenuated in African-American and Hispanic women (AOR=1.06, 95% CI: 0.95-1.18; and AOR=1.14, 95% CI: 0.92-1.18; respectively). Tall women had lower perinatal mortality (AOR=0.92, 95% CI: 0.87-0.98) compared with average stature women irrespective of race.

CONCLUSIONS: Relative to average stature, short maternal stature is associated with an elevated risk of perinatal death independent of BMI, maternal age and education. This association is attenuated in African-American and Hispanic women. Tall stature is associated with a lower risk.

Does a history of recurrent pregnancy loss (RPL) predict a longer interval to the second live birth or increased adverse perinatal outcomes for women in British Columbia?

Cho, Kristy; Albert, Arianne; Mohamed Bedaiwy

BACKGROUND: We determined the interval to second birth and perinatal outcomes in patients with RPL compared to those without. Furthermore, we reported the cumulative second child livebirth rate in RPL women.

METHODS: This retrospective study included women who were nulliparous at the first pregnancy and had ≥2 deliveries in the BCPDR between 2000-2018. The neonatal outcome between RPL and non-RPL pregnancies were compared using Fisher's exact test. The interval to delivery for each group was compared using generalized-additive- modelling. The secondary analysis included women with primary RPL, age ≤35 at the first birth, and ≥1 livebirth between 2000-2010. The cumulative second livebirth rate was determined from the subsequent delivery between 2011-2018 for each women in this cohort.

RESULTS: There were 184,227 womenincluded; 6.7% had RPL. Preterm birth, gestational diabetes, and hypertension occurred more often in RPL compared to non-RPL women (P<0.0001). Interval to second birth was longest in patients with secondary RPL compared to primary and non-RPL, 4.2 years vs 2.7 and 3.1 years (P<0.0001). For the secondary analysis, we included 180,409 women (3% had primary RPL). Over 5 years, 60% of RPL women ≤30 years-old delivered their second child compared to 65%of non-RPL patients.

CONCLUSIONS: Secondary RPL was associated with the longest interval to second child and increased perinatal complications during the ongoing pregnancies. In a historical cohort followed for 8 years after first delivery, the cumulative birth rate was lower in those with RPL, however the absolute decrease was≤5% on average. The results of this study provide important and overall reassuring prognostic information.

Making sense of harms and benefits: Assessing the numeric presentation of risk information in ACOG obstetrical clinical practice guidelines

Foggin, Hannah; Hutcheon, Jennifer; Liauw, Jessica

BACKGROUND: Clinical practice guidelines summarize evidence for clinical decisions. For some, the balance of harms and benefits may be unclear; guidelines may here especially facilitate shared decision making by providing clear risk information about harms and benefits of treatments. Absolute risks (e.g., excess cases per 100 individuals) are easier to accurately understand than relative risks (e.g., odds ratios). Therefore, we assessed the numeric presentation of risk information in the American College of Obstetrician and Gynecologists (ACOG) obstetrical Practice Bulletins, specifically the proportion of recommendations presenting risk information as absolute changes from baseline risks.

METHODS: We reviewed B- and C-graded recommendations in ACOG Practice Bulletins published from January 2017 to March 2020. We focused on those pertaining to counselling, treatment, or delivery planning. We noted whether absolute, relative, and/or baseline risks were presented for each recommendation and for its associated harms and benefits.

RESULTS: Among 21 obstetrical Practice Bulletins, 125 recommendations were related to counselling, treatment or delivery planning. Of these, 46 (37%) described risks numerically; 19 (15%) used absolute format. Of the 178 individual harms and benefits described in these recommendations, 99 (56%) were described numerically; only 30 (17%) reported absolute changes from a baseline risk.

CONCLUSIONS: Most B- or C-level obstetrical recommendations on Counselling, Treatment or Delivery Planning are not supported by numerical data. Of those that are, most do not present absolute risk changes, or absolute changes from baseline risks. Obstetrical practice guidelines should improve the presentation of risk information in these recommendations, which can facilitate clinical counselling.

MANAGEMENT AND OUTCOMES OF CESAREAN SCAR DEFECTS (CSD) IN PATIENTS WITH SECONDARY INFERTILITY

Harjee, Rahana; Khinda, Jas; Simula, Natasha; Mehra, Neeraj; Havelock, Jon; Bedaiwy, Mohamed

BACKGROUND: Following a caesarean section, a discontinuity at the anterior lower uterine segment may develop, which can present with secondary infertility. Currently, limited data is available on the management of cesarean scar defects (CSD) and subsequent fertility and pregnancy outcomes. We aimed to examine treatment methods, symptom improvement, and pregnancy outcomes in women treated for a CSD in the context of secondary infertility.

METHODS: A retrospective cohort study for patients with a CSD between 2008-2019 at a tertiary care centre by three gynecologists with expertise in CSDs.

RESULTS: 26 patients had secondary infertility with a diagnosed defect (mean age 36.4 years). 23 had 1 prior caesarean section and 3 had 2 prior caesarean sections. 3 patients had a prior caesarean scar ectopic pregnancy. 20 patients underwent surgery; 12 by hysteroscopy, and 8 by laparoscopy. 6 patients had no treatment or are awaiting treatment. Following surgery, 11 of 20 patients (55%) successfully conceived at least once. 8 patients were from the hysteroscopy group (66% pregnancy rate) and there were 10 pregnancies, all resulting in live births at term. In the laparoscopy group, there were 3 pregnancies (37.5% pregnancy rate); 2 were term live births, and 1 was a preterm live birth (26 weeks).

CONCLUSIONS: This study suggests appropriate treatment (based on the residual myometrial thickness) can improve pregnancy rates in patients with secondary infertility, in the context of a confirmed CSD. There are limitations given the retrospective design of this study, and a prospective study is needed to confirm these findings.

Does NIPT detect aneuploidies missed by PGT-A? A case series.

Harjee, Rahana; Guimond, Colleen, Jing, Chen; Butler; Neil, Sarah; Nakhuda, Gary

BACKGROUND: To study if non-invasive prenatal testing (NIPT) improved the diagnostic yield for aneuploidy detection in pregnancies resulting after transfer of euploid embryos, as determined to be euploid by preimplantation genetic testing for aneuploidy (PGT-A) with next generation sequencing (NGS).

METHODS: Retrospective case series at an academic-affiliated, private fertility center including patients who elected to have NIPT after conceiving with single, thawed, euploid, embryo transfer (STEET) and patients who had NIPT following IVF/IVSI without PGT-A.

RESULTS: NIPT results were available for 369 patients who conceived after STEET ; 52 screened with PGT-A, and 317 with untested embryos. In the PGT-A group, 46/52 (88.5%) had conclusive first samples, and all confirmed euploidy. Of the 6 patients (11.5%) who had inconclusive results on the first sample, 3 remained noninformative after the second NIPT sample. In the untested group, 291/317 (91.7%) had normal results and 8 (2.5%) had aneuploid results on the first NIPT sample. An additional 3 samples confirmed euploid numeric chromosomes and inconclusive sex chromosome results. Of the 15 initially inconclusive NIPT results in the untested group, 4 patients had persistently inconclusive results after a second NIPT was performed. Three instances of deletion/duplication (1 from PGT-A group, 2 from untested) were eventually diagnosed by diagnostic methods.

CONCLUSIONS: NIPT did not reveal any instances of aneuploidy or CNV in pregnancies that occurred after euploidy was determined by PGT-A but detected aneuploidy in IVF/ICSI pregnancies which used untested embryos. Both PGT-A and NIPT have limits of detection that may miss deletions and microduplications.

Fertility preservation in a transgender man without prolonged discontinuation of testosterone: a case report and literature review

Cho, Kristy; **Harjee, Rahana;** Roberts, Jeffrey; Dunne, Caitlin

BACKGROUND: When proceeding with hormone therapy or gender affirming surgery, transgender patients should be presented with the option of fertility preservation. For this, patients have traditionally had to discontinue exogenous testosterone for up to 6 months or until resumption of menses. This experience has proven to be distressing for patients. This report explores the feasibility of fertility preservation without an extended period of androgen cessation.

METHODS: We present a case report of oocyte cryopreservation in a transgender man without stopping testosterone therapy beforehand. We also performed a literature review, identifying 5 publications reporting on oocyte cryopreservation in transgender men on testosterone therapy.

RESULTS: A 28-year-old transgender man taking testosterone for 3 years presented to a fertility clinic requesting oocyte cryopreservation before hysterectomy and bilateral salpingo-oophorectomies. He expressed a desire to proceed without stopping testosterone. Pre-treatment AMH was 1.89 ng/mL. A standard antagonist protocol was used with added letrozole to minimize estrogenic side effects. Testosterone was stopped for only three doses (prior to and during stimulation). Thirteen oocytes were retrieved, 11 mature and vitrified. The total time off testosterone was 24 days. In prior publications, testosterone was stopped for 3-6 months prior.

CONCLUSIONS: This case report demonstrates the feasibility of ovarian stimulation without a prolonged period of testosterone cessation in a transgender man. The short time duration off testosterone may improve the patient's experience, increase treatment acceptability, and decrease gender dysphoria for transgender men considering fertility preservation. Future studies with a larger sample size should be performed to confirm these findings.

Prevalence and Management Algorithm of Cesarean SectionScar Ectopic Pregnancies: A 9-year Experience

Simula, Natasha; Harjee, Rahana; Bedaiwy, Mohamed; Todd, Nicole

BACKGROUND: Cesarean scar ectopic pregnancies (CSPs) are rare but the incidence is increasing with increasing rates of cesarean deliveries. There is no consensus on management of CSPs with different medical and surgical treatments described in the literature. The aim of this study was to do a retrospective review on the management of the CSP cases at our institution to demonstrate that primary medical management is a safe option for both type 1 and type 2 CSPs.
METHODS: This was a retrospective case series of all patients diagnosed with a CSP at Vancouver General Hospital from January 2010 to September 2019. Patients were identified through the hospital department of medical records and a total of 403 charts were reviewed. 11 patients with a CSP were identified, and data was collected on demographics, diagnosis and treatment outcomes.
RESULTS: 11 patients with a CSP were identified. All patients had medical management as their initial management, except for one patient who had both methotrexate and adjunctive uterine artery embolization. Medical management was successful is all but 2 patients who required subsequent surgical management for persistent gestational sac and HCG. There were no cases of hemorrhage, blood transfusion, uterine rupture or need for hysterectomy.
CONCLUSIONS: Medical management with multi-dose methotrexate, with intragestational KCl for patients presenting with a fetal heart rate, is a safe primary treatment modality for patients with both type 1 and type 2 CSP.

Keynote Speaker

Dr Modupe Tunde-Byass is a Fellow of the Royal College of Obstetricians and Gynecologists of Canada and the UK. She obtained her medical degree from the University of Ibadan in 1987. She completed her OBGYN training (with special interest in Fetal Medicine from Harris Birthright center, London) in the UK and Canada. She has been an active staff at NYGH since 2004. Dr. Tunde-Byass has held major administrative positions e.g Residency site coordinator and Interim Chief of OBGYN at NYGH. She is involved in key quality initiatives at the local and provincial levels. She was the Co-chair for the Quality Standard on Increasing access to Vaginal Birth after Cesarean section and an expert panel member for early pregnancy complications and loss (Joint projects of PCMCH and HQO). She has received numerous teachings and innovation awards. She is involved in medical education. Her research interest is in early pregnancy complications and decreasing CS rate by increasing access to trial of labour after Caesarean section. She has presented some of her research at international conferences and has publications in peer review journals.

Dr. Tunde-Byass is the President of the Black Physicians of Canada. She is involved with Equity, Diversity and Inclusivity with particular focus on Anti-Black Racism.