



Department of
Obstetrics and Gynaecology

28th Annual Research Day

Friday, April 4, 2014

Parker Reception Room
IWK Health Centre

Program Sponsorship

We gratefully acknowledge financial support for this program from:

Research Services, IWK Health Centre

**Atlantic Society of
Obstetricians and Gynecologists**

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Canadian Foundation for Women's Health

**Research Day
Department of Obstetrics and Gynaecology
Dalhousie University**

April 4, 2014

Thank you to our Judges:

Dr. Kellie Murphy,
Division of Maternal Fetal Medicine
University of Toronto

Dr. Andre Bernard,
Division of Anesthesia
Dalhousie University

Dr. Christy Woolcott,
Perinatal Epidemiology Research Unit
Dalhousie University

- 0830 Reception with Coffee/Muffins/Fruit
- 0845 Welcome – Dr. B.A. Armson
Professor and Head,
Department of Obstetrics and Gynaecology
Dalhousie University
- Session I: Moderator, Tony Armson/Baharak Amir**
- 0900 INVITED SPEAKER**
Dr. Andre Bernard, Dalhousie University
*“Doing ‘good’ in a complex world:
Perspectives on the global health policy
landscape and lessons learned from ‘the field’*
- 0945 Jason Kim, PGY4
*“A prospective cohort study using e-learning
modules as a supplemental teaching resource
for third year Dalhousie obstetrics and
gynaecology clerkship students”*
- 1000 Lauren Jain, PGY1: PROPOSAL
*“Neonatal outcomes of adolescent pregnancy in
Nova Scotia: a look at the relative associations
of multiple determinants of health”*
- 1010 Leanne Martin, PGY3, Memorial University
*“Can video gaming help improve laparoscopic
skills in medical students?”*

- 1025 Jessica Pearsall, PGY1 PROPOSAL
“How valuable is long-bone biometry for assessing risk of fetal Down syndrome?”
- 1035 Anita Smith, PGY4
“Is PPROM latency influenced by single vs multiple agent antibiotic prophylaxis in known GBS positive women delivering preterm?”
- 1050 NUTRITION BREAK**
- 1110 Rachelle Findley, PGY1 PROPOSAL
“CMV and Toxoplasmosis - Newborn Outcomes and Incidence Rates in Women with Fetal Echogenic Bowel”
- 1120 Brahmananda Teeluckdharry, MED IV
“Urinary tract injury at benign gynecologic surgery: Role of Cystoscopy”
- 1130 Lesley Roberts, PGY1 PROPOSAL
“Clinical outcomes of elective fresh embryo transfer with early blastocysts versus mature blastocysts”
- 1140 Brandon Gheller, MSc Candidate
“Higher circulating levels of insulin after dairy snack in children are not determined by insulin secretion as measured by C-peptide but rather reduced levels of hepatic insulin extraction”
- 1155 Erin Quigley, MED II
“Adjuvant therapy for Endometrial Cancer in Nova Scotia 1995-2012”
- 1205 Abbey Poirier, MSc Candidate
“The association between air pollutants and gestational hypertension in women residing in urban Halifax”
- 1220 Mohammad Alyafi, PGY1, PROPOSAL
“Urinary retention after laparoscopic assisted vaginal radical hysterectomy (LAVRH) and open abdominal radical hysterectomy (ORH)”
- 1230 Grace Parr, PGY4 PROPOSAL
“Outcomes in high surgical risk women with endometrial cancer treated with hormone therapy”
- 1240 LUNCH (Classroom B&C)**
- Session II: Jo-Anne Brock**
- 1340 INVITED SPEAKER:**
Dr.Kellie Murphy, University of Toronto
“Antenatal corticosteroids: where we have been and where we are going”
- 1440 Jillian Ashley-Martin, PhD Candidate
“Prenatal exposure to heavy metals and perfluoroalkylacids and cord blood levels of immune system biomarkers”
- 1455 Emma Struthers, PGY5
“Prospective cohort study on the use of video as an anatomy teaching tool for gynecology residents learning total laparoscopic hysterectomy and bilateral salpingo-oophorectomy”

- 1510 Kyungsoo Shin, PhD Candidate
Postprandial ghrelin suppression is impaired in obesity: role of insulin resistance and inflammatory cytokines
- 1525 Shannon Joice, PGY1 PROPOSAL
“How are we screening pregnant women for thyroid disease in Nova Scotia?”
- 1535 Chris Nash, PGY5
“The accuracy of prenatal ultrasound in estimating fetal birth weight at various gestational ages in diabetic women with singleton pregnancies”
- 1550 Katie Matheson, PGY3 PROPOSAL
GDM screening in Nova Scotia women: One-step vs. Two-step approach
- 1600 **Awards Presentation**
Refreshments to be served in the Parker Reception Room

ABSTRACTS

A prospective cohort study using e-learning modules as a supplemental teaching resource for third year Dalhousie obstetrics and gynecology clerkship students.

Jason Kim, PGY 4, Jillian Coolen, MD FRCSC

Background: With the expansion of medical school class sizes across the country, there has been the necessary development of distributed clinical learning sites. The Dalhousie medical school program is no exception to this, with clinical clerkship sites throughout Nova Scotia and New Brunswick. With various clinical training sites there will undoubtedly be a variety of clinical experiences. E-learning is an educational tool that is believed to be able to standardize learning across education sites, and enhance a student's overall educational experience.

Methods: The Dalhousie medical class of 2014 was split into 2 natural cohorts. Group 1 completed their obstetrics and gynecology rotation from September 2012 to March 2013 (n=54) and Group 2 completed their rotation from April 2013 to September 2013 (n = 60). All students were given the opportunity to complete a formative examination prior to their summative evaluation on the Dal Blackboard learning system. However, only Group 2 had access to the six obstetrics and gynecology e-modules, upon which the formative evaluation was based.

Results: 47 students in group 1(87%) and 45 students in group 2 (75%) completed the formative evaluation. The statistical analysis showed that the mean score achieved by each cohort was 8.62 (95% C.I. = 8.17 - 9.07) and 9.13 (95% C.I. = 8.83 - 9.43) respectively. The scores from the two groups did not follow a normal distribution; therefore, a Mann-Whitney test was performed, and the difference was not significant (p = 0.08).

Conclusion: Having access to six e-learning modules did not improve the third year Dalhousie medical students' scores on a formative evaluation completed prior to their summative evaluation.

Neonatal Outcomes of Adolescent Pregnancy in Nova Scotia: a look at the relative association of multiple determinants of health

Lauren Jain MD, Nancy VanEyck MD FRCSC, Colleen O'Connell PhD

Background: Adolescent pregnancy is a significant public health issue, not only in the developing world, but in Canada as well. It has been suggested that this population represents a distinct high-risk obstetrical group, however data is inconclusive as to which outcomes may be affected. Few Canadian studies have focused on this topic, with no published data specific to the East Coast population. Although findings in the Canadian population may be congruent, differences may exist between provinces.

Objectives: The objectives of this study are to characterize the relationship between adolescent pregnancy and pregnancy outcomes, with a focus on neonatal outcomes in Nova Scotia, and to delineate the relative association of known social determinants of health with these pregnancy outcomes. This study will increase awareness of most pertinent risk factors and pregnancy outcomes specific to the Nova Scotia adolescent population, and provide a template on which to target counseling and management in order to optimize maternal and neonatal health. Additionally, it may highlight gaps or areas for improvement in antenatal care, and provide direction to public health activists in adolescent health.

Methods: This study will be a retrospective population-based cohort analysis using the Nova Scotia Atlee Perinatal Database. Specific maternal, obstetrical and neonatal outcomes between January 2000 and December 2013 will be compared among adolescent pregnancies (<19 years of age), and those of adult women (>19 years). Inclusion criteria include: nulliparity and singleton gestation.

Results & Conclusion: Pending

Can video gaming help improve laparoscopic skills in medical students?

Leanne Martin PGY3 Memorial University, Krisztina Bajzak, MD, FRCSC, FACOG Donna Hutchens, RN

Objective: To investigate whether training using the Nintendo Wii™ system can improve laparoscopic skills in medical students.

Methods: A total of 26 pre-clerkship medical students were enrolled in this prospective randomized control trial. An experimental group was randomly assigned to practice on the Nintendo Wii™ system for six supervised 30-minute sessions over a 2-week period. The control group was asked to refrain from playing video games (or adhere to their usual gaming habits) for the 2-week period. All participants completed an exercise on the validated LapSim® surgical simulator before and after the 2-week period as a surrogate measure of their surgical skill. Both groups were compared on their ability to complete a surgical task on the LapSim®. Groups were compared using Fisher's exact, student's t-test and Mann Whitney U test. Regression analysis was performed to control for potential confounders, including gender, current, and prior gaming history.

Results: Baseline demographics were similar, with the exception of age. Participants in the control group were younger than the experimental group ($p=0.03$). The primary outcome, total time difference was less in the study group, but was not significant ($p=0.51$). There was no significant difference in instrument path length difference ($p=0.65$) or angular path difference ($p=0.94$). Linear regression analysis showed that pretest time predicted posttest time. Furthermore, regression analysis showed that gender, current or past gaming, and pre-test time had no influence on the primary outcome.

Conclusion: Video gaming did not appear to improve the laparoscopic skills of medical students, measured using the LapSim® surgical simulator. This is contrary to typical findings in the literature that video gaming improves surgical skill.

“How valuable is long-bone biometry for assessing risk of fetal Down syndrome?”

Jessica Pearsall, Michiel Van den Hof

BACKGROUND: ‘Soft markers’ are distinct ultrasound findings that may be used to aid in the assessment of risk for fetal Down syndrome. The presence of soft markers can lead to further targeted ultrasound evaluation to adjust risk for fetal Down syndrome and the counsel about further invasive genetic testing (amniocentesis). Two such soft markers are shortened femur and humerus length.

OBJECTIVES: The objective of our study is to evaluate long-bone biometry, done between 18-24 weeks gestational age, for assessing the risk of fetal Down syndrome. Our primary question is whether in fetuses between 18-24 weeks gestational age, is there a threshold beyond which relative long bone length is protective for fetal Down syndrome?

METHODs: This will be a case control study using data from the ViewPoint database used at the IWK. Population of interest would be fetuses between 18-24 weeks who are referred to FATC for a genetic sonogram. Our case group will include 100 Trisomy 21 fetuses diagnosed by either antenatal or neonatal genetic testing. The intervention/risk factor we will be evaluating is relative femur and humerus shortness. There will be two control groups. Both groups will contain 200 normal karyotype fetuses. The first control group will consist of patients who were referred for anything that would increase their risk for trisomy 21 (i.e. advanced maternal age, abnormal maternal serum screen etc.). The second control group will consist of patients who had a normal/low pretest risk for trisomy 21 (Those referred due to previous LEEP etc.). Information on biparietal diameter (BDP), relative femur length (FL), relative humerus length (HL), and abdominal circumference (AC) will be extracted from the ViewPoint database for all cases and controls.

Is PPROM latency influenced by single vs multiple agent antibiotic prophylaxis in known GBS positive women delivering preterm?

Anita Smith, Victoria M. Allen, Jennifer Walsh, Krista Jangaard.

Objective: To evaluate the influence of single vs multiple agent antibiotic prophylaxis on the duration of latency and significant infectious neonatal morbidity from rupture of membranes to delivery < 37 weeks gestational age in women known to be GBS positive.

Methods: Data was obtained from the Nova Scotia Atlee Perinatal Database. Pregnancies complicated by preterm pre-labour rupture of membranes were included in this retrospective, cohort, population-based study and were excluded if they required immediate obstetrical delivery. Comparisons in latency and adverse neonatal outcomes were made based on single vs multiple antibiotic receipt. Summary characteristics were compared using Chi-square analysis with significance <0.05. Logistic regression was used to estimate adjusted relative risks and 95% confidence intervals for all outcomes and to account for confounding variables.

Results: From 1988 to 2011, the potential study population was 119,158 pregnancies. A total of 3,435 deliveries were identified to be preterm with PROM (3%). Of these, 303 mother-baby pairs (9%) were known to be GBS positive by urine or swab culture. Adjusted comparisons of latency and neonatal sepsis by antibiotic regimen showed no difference ($P>0.05$).

Conclusions: The 2013 SOGC guideline on GBS prophylaxis now recommends antibiotics with PPROM for both latency and GBS prophylaxis. This clinically relevant evaluation in a select preterm group demonstrated that type of antibiotic regimen did not influence either latency with PPROM and GBS positive culture or rates of neonatal sepsis. Ongoing evaluation of serious neonatal outcomes is essential given this change in recommendation.

CMV and Toxoplasmosis - Newborn Outcomes and Incidence Rates in Women with Fetal Echogenic Bowel

Rachelle Findley, Victoria Allen, Jo-Ann Brock

Fetal echogenic bowel is an ultrasound finding that is defined as fetal bowel with areas of echogenicity that are equal to or greater than that of surrounding bone.

There are multiple causes for fetal echogenic bowel including cystic fibrosis, aneuploidy, congenital infections, fetal growth restriction, intra-amniotic bleeding, and congenital bowel malformations. Although many pregnancies affected by infectious agents are asymptomatic, rates can be as high as 5 to 30% for symptomatic newborns with CMV and 15 to 71% affected by toxoplasmosis. Newborn outcomes can include intrauterine fetal demise, neurodevelopmental delays, auditory and vision abnormalities, intrauterine growth restriction, and many others. This project will be a retrospective observational study where we identify through the Molecular & DNA lab's database women whom were identified as having fetal echogenic bowel on second trimester ultrasound and sent for further testing. This database has been active since 2007 and data will be collected from 2007 until December 2013. There are approximately 430 pregnancies in the database from 2007-2013 which have been identified as having echogenic bowel and most should have had maternal serologic testing for CMV and toxoplasmosis. This will allow us to determine an incidence rate of maternal IgM positivity for CMV and toxoplasmosis for our population. After identifying the positive women, we will be able to complete a chart review of the pregnancy and newborn outcomes.

Urinary Tract Injury At Benign Gynecologic Surgery: Role Of Cystoscopy

Brahmananda Teeluckdharry (Kevin), Donna Gilmour
Gordon Flowerdew, Krystal Van den Heuvel MD, Katharina
Kieser MD FRCS

OBJECTIVES: To determine the rates of urinary tract injury after benign gynecological surgery and to explore the role of routine intraoperative cystoscopy.

Study Methods: We conducted a systematic search for urinary tract injuries at gynecological surgery in Pubmed and Embase for the period from January 2004 to Dec 2013. We combined this with searches done previously in MEDLINE for two systematic reviews performed in the same fashion that included studies from January 1966 to May 2004.

Tabulation And Integration: 79 studies fit our inclusion criteria with 58 reporting the frequency of lower urinary tract injury during benign gynecologic surgery, 20 reporting the frequency of injury with routine intraoperative cystoscopy after benign gynecologic surgery, and 1 reporting the frequency of injury with and without routine intraoperative cystoscopy. We determined the crude ureteric and bladder injury rates for each surgery type from the studies where routine intraoperative cystoscopy was not performed and then from the studies where routine intraoperative cystoscopy was performed.

Results: The overall ureteric and bladder injury rates for all surgery types without cystoscopy were 0.24% (CI: 0.22 - 0.26) and 0.50% (CI: 0.47 - 0.54) respectively. These increased to 1.44% (CI: 1.19 - 1.73) and 2.15% (CI: 1.77 - 2.59) respectively when cystoscopy was used. We did not expect this increase, but only that a greater proportion would be detected intraoperatively. The percentages of ureteric and bladder injuries detected intraoperatively increased from 17% (CI: 12 - 24) and 79% (CI: 75 - 82) to 93% (CI: 87 - 97) and 95% (CI: 90 - 99) respectively when cystoscopy was used.

Conclusions: Routine intraoperative cystoscopy detects urinary tract injuries, including some that would otherwise never be detected.

Clinical outcomes of elective fresh embryo transfer with early blastocysts versus mature blastocysts

Lesley Roberts, S Murphy, R Bouzayen, D Mortimer

Background: Assisted reproductive therapy (ART) currently has an overall clinical pregnancy rate per embryo transfer of 36.6% in Canada (1). Clinical pregnancy rates and live birth rates are improved in blastocyst embryo transfer compared to early cleavage stage embryo transfer (2-5). Selection of blastocysts is based on a morphologic grading scheme. Specifically, the stage of blastocyst, the inner cell mass (ICM), and trophoctoderm (TE) are evaluated. However, the impact of blastocyst development, maturity, and morphology on pregnancy and live birth rates remains unclear.

Objectives: Our primary objective is to identify live birth rates following embryo transfer of early blastocysts compared to blastocysts. A secondary objective is to what aspect of blastocyst morphology is most predictive of reproductive outcomes.

Methods: This will be a retrospective cohort study. Data will be collected from the Atlantic Assisted Reproductive Therapies (AART) database and from review of AART patient charts. Our population will include all women in the Fertility Clinic Management Software databases who received fresh embryo transfer on day 5 from 2005 to 2012.

Results: We will compare clinical outcomes between early blastocyst and blastocyst transfer. Primary outcomes will include biochemical pregnancy rate, clinical pregnancy and live birth rate. A subgroup analysis will be conducted to determine if there is a correlation between blastocyst grade and live birth rate. Univariate and multivariate logistic regression analysis will be used to evaluate the effect of TE, ICM, and cumulus-oocyte complex grade on implantation and live birth. Results will be considered statistically significant if $p < 0.05$.

Conclusions: Routine intraoperative cystoscopy detects urinary tract injuries, including some that would otherwise never be detected

Higher circulating levels of insulin after a dairy snack in children are not determined by insulin secretion as measured by C-peptide but rather reduced levels of hepatic insulin extraction

Brandon JF Gheller, Mary Gheller, Athena Li, N. Theresa Glanville, Nick Bellissimo, Jill Hamilton, G. Harvey Anderson, Younes Anini, Bohdan L Luhovyy

Background: A dairy product provided as a snack has been shown to increase serum insulin and reduce blood glucose levels in children compared to a non-dairy snack of the same available carbohydrate content and similar energy but lower in protein and higher in fat. The objective of this study was to determine if the observed increase in insulin is due to increased secretion or reduced hepatic clearance.

Methods: In a repeated measures crossover design, normal weight (n =11, 5 boys and 6 girls) and overweight/obese (n =7, 7 boys) children (age: 9-14 y), were randomly assigned to consume one of two treatments containing 25 g of available carbohydrates: Greek-style yogurt (GY, 198.9 g, 171 kcal, 0 g fat, 26.1 g carbohydrate, 17 g protein) and mini sandwich type cookies (C, 37.5 g, 175 kcal, 7.5 g fat, 26.3 g carbohydrate, 1.3 g protein). Blood samples were collected at 0, 30, 60, 90 and 120 min. Insulin and C-peptide levels were measured by ELISA.

Results: There was no difference between treatments in baseline C-peptide levels. There was an effect of time (P<0.001) but not treatment or weight status on mean two-hour concentrations of C-peptide and its area under the curve (AUC). There was no effect of treatment, time or their interaction on insulin secretion. There was a difference between the treatments in baseline hepatic insulin extraction (P>0.01). When expressed as change from baseline, there was an effect of time (P<0.05) and treatment (P<0.01) indicating less hepatic insulin extraction after GY.

Conclusion: The sustained levels of increased circulating insulin in children after consuming a snack high in milk protein are mediated by reduced hepatic insulin clearance.

Adjuvant therapy for Endometrial Cancer in Nova Scotia 1995-2012

Erin Quigley, James Bentley

Background: Endometrial cancer is the most common gynecological cancer. While surgery alone is effective in patients with cancer confined to the uterus (i.e. Stage 1), patients with extrauterine disease have significantly higher recurrence rates, poorer survival rates, and typically require adjuvant therapy. The trend in adjuvant therapy has moved from radiation alone, to a combination of radiation and chemotherapy. Currently, there are no standard guidelines for the use of adjuvant therapy in advanced stage endometrial cancer.

Methods: The Tupper database was used to identify 217 patients diagnosed with advanced stage endometrioid type endometrial cancer between 1995 and 2012, who received treatment under the guidance of the division of Gynecologic Oncology. Data concerning the stage of their cancer, type of adjuvant treatment received, date and site of first recurrence, and current status was collected and analyzed, with the primary outcome being overall survival, focusing on the comparison between those who received radiation alone and those who received radiation and chemotherapy.

Results: Overall, 5 year survival in patients with stage 3A disease was 86%, 3C was 66%, and 4 was 46%. The most compelling data arose from stages 3A and 3C. In patients with 3A disease, those who received radiation and chemo had an improved 5 year survival over those who received radiation alone, 100% and 86% respectively. A similar improvement was found in patients with 3C disease with 5 year survivals of 88% when treated with the combination compared to 65% when treated with radiation alone.

Conclusion: The addition of chemotherapy to radiation therapy for advanced stage endometrioid type endometrial cancer improved survival. Further research is needed to evaluate the role of radiation therapy.

Urinary Retention after Radical Hysterectomy

Mohammad Alyafi, MD, MPH, Linda Dodds, PhD, Katharina Kieser, MD, MSc

Background: Urinary retention is one of the most prevalent complications following radical hysterectomy (1). There are many practices described in the literature for postoperative bladder care (1-3). Without a standard, evidence-based protocol for post radical hysterectomy bladder care, surgeons often individualize or adopt institutional protocol based on anecdotal evidence.

Objective: to develop recommendations for standardized bladder care following radical hysterectomy.

Methods: This is a retrospective cohort study. We will review the charts of all women who have undergone radical hysterectomy from October 2005—since the inception of electronic medical records in QEII—to December 2013 for early stage cervical cancer. We will use Nova Scotia Cancer Centre/Gynecology Oncology database, QEII Clinical Portal medical records, and Share provincial medical records to abstract relevant data.

Outcome Measurement: development of urinary retention following radical hysterectomy in the immediate post-operative period, and following discharge from hospital until the first clinic visit (typically, 6 weeks after discharge from hospital). We will also compare the incidence of urinary retention following open radical hysterectomy to that following laparoscopic radical hysterectomy.

Results: We will use Student-t test to compare the incidence of urinary retention in the 2 groups. For categorical data we will use chi-squared test. Finally, we will construct categorical regression models to account for other co-variables, including potential confounders and effect modifiers.

Conclusions: The findings could be developed to construct evidence-based guidelines bladder care following radical hysterectomy. Additionally, the findings will inform expectations of women with undergoing radical hysterectomy in the future.

Prenatal exposure to heavy metals and perfluoroalkyl acids and cord blood levels of immune system biomarkers

J. Ashley-Martin, L. Dodds, T. Arbuckle, A. Levy, R. Platt, J. Marshall

Background: Heavy metals and perfluoroalkyl acids (PAA) have been hypothesized to be a component cause in atopic disease etiology. Elevated levels of Immunoglobulin E (IgE), Interleukin-33 (IL-33) and Thymic Stromal Lymphopoietin (TSLP) are integral to risk of atopic disease. Yet, it is not known whether *in utero* exposure to the contaminants is associated with elevated levels of TSLP, IL-33 and IgE at birth. Despite gender differences in childhood atopy prevalence, potential sex-dependent mechanisms of early life exposures are unclear.

Methods: The objectives were 1) to examine associations between prenatal heavy metal and PAA exposure and elevated umbilical cord blood immune system biomarker levels and 2) to assess how these relationships differ by infant sex. This study utilized data collected in the Maternal-Infant Research on Environmental Chemicals (MIREC) Study, a trans-Canada cohort study of 2001 pregnant women. 1254 women had a singleton, term birth and cord blood sample. Multivariate logistic regression was used to model associations between exposures and odds ratios (OR) of elevated immune system biomarker levels ($\geq 80^{\text{th}}$ ile TSLP/IL-33; $\geq 85^{\text{th}}$ ile IgE).

Results: No significant associations between environmental contaminant exposure and elevated IgE, TSLP or IL-33 were observed. Effect modification by sex was observed in the relationship between prenatal lead exposure and IgE (females; OR= 1.3, 95% CI: 0.4-4.1; males OR=0.3, 95% CI: 0.1-1.0) and between prenatal exposure to perfluorohexanesulfonate (PFHxS) and TSLP/IL-33 (males OR=1.37, 95% CI: 0.7-2.6; females OR=0.6, 95% CI: 0.3-1.1).

Conclusions: Prenatal lead and PFHxS exposure may be affecting fetal immune system biomarkers in a sex-dependent manner. The absence of significant findings may suggest that any clinically detectable effect of these chemicals in an atopic disease pathway is not evident at birth.

“ Prospective cohort study on the use of video as an anatomy teaching tool for gynecology residents learning total laparoscopic hysterectomy and bilateral salpingo-oophorectomy”

Emma Struthers

OBJECTIVE: To develop a validated teaching video on pelvic anatomy using footage from total laparoscopic hysterectomy and bilateral salpingo-oophorectomy (TLH/BSO) procedures.

STUDY DESIGN: An anatomy video was created of TLH/BSO procedures completed in Halifax, Nova Scotia from September 2011-June 2012. The video included surgical videos, drawings and narration to review pelvic anatomy. test. A one-way ANOVA was used to calculate differences between groups. A p value <0.05 was considered significant.

RESULTS: The average score for pre-video exam was 24.1/52 (46.1%) and the average score for the post video exam was 39.6/52 (76.1%) (p=0.000). Although senior residents achieved significantly higher scores on both pre and post tests, scores did improve significantly at all levels of training. The average ratings for video quality (9.14/10) and anatomy review (9.44/10) did not differ significantly by year of training. The average rating for likelihood to use the video again was 9.52/10.

CONCLUSIONS: Our results demonstrate that anatomy test scores improved dramatically after viewing our video. These results were significant for all levels of training and demonstrate the effectiveness of this video as an anatomy teaching tool.

Postprandial ghrelin suppression is impaired in obesity: role of insulin resistance and inflammatory cytokines

Shin K and Anini Y

Background: The stomach derived hormone, ghrelin, has emerged as a key player in the neuro-endocrine regulation of appetite and energy storage. Ghrelin increases food intake and adiposity through its action on the ghrelin receptor in appetite-regulating neurons of the hypothalamus. Ghrelin levels increase during periods of fasting and decrease after a meal is consumed. Although obesity is commonly associated with increases in food intake, basal concentration of ghrelin was found to be decreased in obese individuals. These findings suggest that obesity is linked with a dysregulation in ghrelin secretion. The goal of the present study was to investigate the mechanisms leading to the dysregulation of ghrelin secretion in obesity.

Methods: We used the mouse model of high fat-diet induced obesity to investigate the glucose-suppressing effect of ghrelin secretion in normal weight and obese mice. We further delineated the intracellular pathways involved using primary culture of ghrelin cells. Since increased adipose tissue-derived inflammatory cytokines was linked with insulin resistance, we investigated the role of TNF- α in ghrelin secretion.

Results: The suppressing effect of oral glucose on ghrelin secretion was found to be significantly higher in normal weight compared to obese mice (p<0.01). Insulin (1-10 nM) significantly suppressed ghrelin secretion in normal weight (by 60%, P<0.05, n=6), but failed to do so in obese animals. This effect was found to be linked with decreased insulin receptor expression and activation of Akt phosphorylation. Pre-treatment of ghrelin cells with TNF- α (10ng/mL) abolished the inhibitory effect of insulin (10 nM) on ghrelin secretion.

Conclusion: We demonstrate that impaired ghrelin suppression found in obesity is due to insulin resistance occurring at the level of ghrelin cells and involves adipose tissue-derived inflammatory cytokines.

How are we screening pregnant women for thyroid disease in Nova Scotia?

Shannon Joice, Michiel Van Den Hof, Linda Dodds

Overt hypothyroidism in pregnancy has adverse obstetrical and child outcomes including an increased risk of miscarriage, preterm deliveries and decreased IQ in children. Subclinical hypothyroidism has also been implicated in these adverse outcomes.

While there are no Canadian guidelines to advise physicians on the treatment of thyroid disorders in pregnancy, there are guidelines from various American groups. The American Thyroid association recommends treating women who have overt hypothyroidism with levothyroxine. Treatment has only been recommended for subclinical hypothyroidism if the woman is positive for anti TPO antibodies. The Endocrine Society recommends treatment for both overt hypothyroidism and subclinical hypothyroidism. Neither organization recommends universal screening for thyroid disorders in pregnancy. Instead they both recommend screening only high risk women (high risk being defined by pre-established criteria.) This study will determine who is being screened for thyroid disease at the IWK. It will be carried out as a retrospective cohort study. The population of interest is women who deliver at the IWK between the years of 2011 and 2013. The measured outcome will be a status of tested versus not tested for thyroid disease with a serum TSH level. The data will be expressed as percent of high risk women who were screened with a TSH, high risk women who were not screened with a TSH, low risk women who were screened with a TSH and low risk women who were not screened with a TSH. Likelihood ratios of having a specific a high risk factor and then being screened for thyroid disease will also be calculated.

The accuracy of pre-natal ultrasound in estimating fetal birth weight at various gestational ages in diabetic women with singleton pregnancies.

CM Nash MD, C Woolcott PhD, C O'Connell PhD, BA
Armson MD MSc

Objectives: To determine whether the timing of prenatal ultrasound affects the accuracy of estimation of birthweight in pregnancies complicated by diabetes.

Study Methods: Using a retrospective cohort design, 971 diabetic women were identified between 1995-2010 through linkage of the NS Atlee Perinatal Database, Viewpoint ultrasound database and clinical records. The Mongelli equation for gestation-age-adjusted birthweight projection was used to estimate birthweight from estimated fetal weight (EFW) obtained from third trimester ultrasounds. Frequency tables were used to estimate the proportion of EFW that was within +/-250g of actual birthweight by gestational week at ultrasound and the accuracy of EFW conducted at <36 weeks versus >=36 weeks for SGA and LGA at birth.

Results: Of ultrasounds performed at 36+0 to 37+6 weeks, 47% estimated birthweight (BW) +/-250g. Before 36 weeks, 33% of ultrasounds estimated BW +/-250g and after 37 weeks 38% estimated BW +/-250g. For SGA infants, the sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were 22%, 99%, 61%, 94% for ultrasounds performed <36 weeks and 52%, 98%, 55%, 97% for >=36 weeks. For LGA, sensitivity, specificity, PPV and NPV were 70%, 70%, 51%, 84% for <36 weeks and 67%, 80%, 66%, 81% for >=36 weeks.

Conclusions: Ultrasound estimation of birthweight appears to be most accurate when performed at 36 to 37 weeks gestation in diabetic pregnancies. Timing of ultrasound may not affect accuracy of birthweight estimation of SGA and LGA.

GDM screening in Nova Scotia women: One-step vs. Two-step approach

K. Matheson, C. Woolcott, J. Coolen

Background/Objectives: Gestational diabetes mellitus (GDM) is a complication of pregnancy that affects 4-5% of Nova Scotian women and can have important maternal and fetal consequences. GDM screening is part of routine prenatal care in Canada, but the methods of screening are currently under revision based on emerging evidence.

In 2013, the Canadian Diabetes Association (CDA) produced new guidelines for GDM screening. They suggest two possible screening protocols for GDM: a two-step approach in which patients are initially screened with a 50g glucose challenge test (GCT), followed by a 75g oral glucose tolerance test (OGTT) if the GCT is indeterminate, or a one-step approach whereby patients proceed directly to a 75g OGTT. While the guidelines suggest a preference for the two-step approach, the CDA finds both methods acceptable, leaving it to the discretion of care providers and health authorities.

Given the potential for diagnostic and therapeutic delays by having patients undergo two-step testing, as well as potential burdens on hospital systems from additional laboratory testing our question is: can we determine, based on risk factors, a cohort of patients who are more likely to have an indeterminate GCT and go on to have an OGTT diagnostic of GDM?

Methods: We will use the Atlee Perinatal Database to identify patients with a diagnosis of GDM and their risk factors. The laboratory database and chart review will be used to augment the data.

We hope that this study could provide physicians with clarity regarding which approach to use for GDM screening and reduce burden on patients and the healthcare system from undergoing testing in a two-step fashion. In other words, identify pregnant women who should proceed directly to an OGTT.

“Outcomes in high surgical risk women with endometrial cancer treated with hormone therapy”

Grace Parr, PGY4, James Bentley

Background: According to the Canadian Cancer Society, 1 in 39 women in Canada will develop endometrial cancer in their lifetime and 1 in 173 will die from the disease. Although most women are diagnosed with early stage disease (68% have involvement of the primary site only), some women cannot undergo definitive surgical management due to significant operative risk. It is known that post-menopausal women aged 45-70 have the highest risk of developing endometrial cancer, and risk of comorbid conditions increases with age. Hormonal therapy for the treatment of endometrial cancer has been studied since the early 1970s. The focus of research in the use of hormonal therapy for treatment of endometrial cancer has been as fertility-sparing and/or conservative treatment in recent years. Some work has shown progesterone therapy to have acceptable efficacy in women with increased surgical risk. Despite the ‘acceptable efficacy’ of progesterone treatment of endometrial cancer in women at high surgical risk, few studies have been published with a specific focus on the survival rate or complications of this treatment, and often these studies are linked with recurrent or advanced disease.

Methods/Objectives: A cross-sectional study will be conducted of women with endometrial cancer who are at increased surgical risk treated with hormonal therapy. Specifically, the one-, three-, and five-year survival rates will be investigated as the primary outcome. Secondary outcomes of the study will include side effects and complications of this therapy. The overall goal of this study is to enhance the knowledge of clinicians and high surgical risk patients in Nova Scotia requiring alternative treatment options for endometrial carcinoma.

