



20th International Conference on

NEONATOLOGY AND PERINATOLOGY

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Posters

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A holistic embrace: Development of an infant cuddler & family support program in a neonatal intensive care unit

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The Family Support Program (FSP) at St. Michael's Hospital (SMH) utilizes trained volunteers to cuddle hospitalized infants in the absence of parental or guardian presence in the Neonatal Intensive Care Unit (NICU). The program aims to provide universally recognized physiological benefits of cuddling to infants, as well as to alleviate stress for families associated with hospitalization and illness through companionship and the fostering of a welcoming environment. Opioid exposure during pregnancy can result in neonatal withdrawal after birth, also known as Neonatal Abstinence Syndrome (NAS). As an inner city hospital with a diverse patient population, specific focus was given to creating a program at SMH that would meet the needs of marginalized families, including those struggling with substance use and addiction. The FSP was initially launched to optimally address the needs of infants experiencing NAS; however, many families encounter barriers to spending time with their hospitalized infants. Barriers could include, but are not limited to: single parent families or those with limited social support; continued employment after birth; parents with multiples; no or limited access to childcare for siblings; transportation; parental illness; need for parental self-care; and child protection involvement (restricting access or mandating outside program participation). Recognizing the benefits of a cuddling program for all infants and their families the FSP was extended as a standard of care for all infants admitted to the NICU. While volunteer cuddling programs are gaining momentum in NICUs in Canada; the FSP is unique in that the need for support for the whole family, and not just the hospitalized infant, is recognized as an integral program component. The creation, development and ongoing coordination of this program is led by social work and nursing and highlights how innovative programs can improve the quality of care provided to clients and their families. The impact of the Family Support Program on infants with NAS is currently being examined in a mixed-methods research project entitled The Infant Cuddler Study, with the aim to provide evidence that can lead to practice. The poster presentation will highlight how social work and nursing can take the lead in the development and coordination of a family support program in a Neonatal Intensive Care Unit.

Summary: The Family Support Program utilizes trained volunteers to cuddle hospitalized infants in the NICU. This social work/nursing led program aims to provide universally recognized benefits of cuddling, as well as to alleviate stress for families associated with hospitalization and illness.

Biography

Catherine is currently a Clinical Nurse Educator in the Neonatal Intensive Care Unit at St Michael's Hospital.

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Updated diagnostic criteriae defining ‘CHARGE’ Syndrome: A case scenario

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Introduction: Pagon et al coined the term ‘CHARGE’ an acronym to 5 major features. Restricted criteria of Pagon and Blake et al, dichotomously divided, made diagnosis of this entity rare, giving rise to ‘possibly’ CHARGE or ‘Near’ CHARGE like terms. Major Signs of CHARGE Syndrome are (3C): Coloboma(iris/choroid, with or without microphthalmia, Atresia of choanae, Hypoplastic semi-circular Canals. The Minor Signs of CHARGE Syndrome are, Rhombencephalic dysfunction(brainstem dysfunctions, cranial nerve VIIto XII palsies and neurosensory deafness), Hypothalamo-hypophyseal dysfunction(including GH and gonadotrophin deficiencies), Abnormal middle or external ear, Malformation of mediastinal organs(heart,esophagus) and Mental retardation.

Case Discussion: Term, AGA, Male baby, 4th order birth to Non-consanguinously married couple, delivered by normal vaginal route, through meconium stained amniotic fluid, birth weight being 3.2 kgs. Mild respiratory distress since birth required supplemental oxygen and referred to us on D4. On admission, baby had significant respiratory distress, Downe's score being 6/10, taken on conventional mechanical ventilation for 48 hours, weaned to hood. Dysmorphic features observed were bilateral nanophthalmos, high and narrow arched palate, Lt.choanal atresia. Chest Xray showed fluffy opacities in bilateral lungs, Echo screening showed 2 ASDs, 1 VSD, USG abdomen revealed Rt Renal agenesis, MRI Brain being normal, OAE b/l ear-Refer. Ophthalmologist opined very guarded prognosis of vision.

Discussion: CHARGE is characterized by very specific developmental anomalies of optic vesicle, otic capsule, midline CNS structures and upper pharynx. Updated definition of CHARGE reinforces very specific embryological defects avoiding inclusion of nonspecific or secondary anomalies and dismiss sex-dependent criteria. 3 Major criteriae refer to 3 non-overlapping embryonic territories, 5 Minor criteriae to topographically distinct areas. Hence 3 major criteria fulfilled in our case study, defines the syndrome.

Biography

Laxmi S Hadalagi, after completing MBBS in the year 2002 at my hometown, she perceived paediatrics as she was very much interested in this field and completed my postgraduation in reputed medical college of Karnataka i.e Bapuji and Chigateri Government Hospital, Davangere, Karnataka. Seeing many neonates suffering from birth asphyxia, she always questioned herself, Is there no treatment available to prevent damage of these growing brains????This zeal took her towards doing Fellowship in Neonatal and Perinatal Medicine and started working at a Tertiary Care Unit catering to peripheries, started Therapeutic Hypothermia with Cerebral Function Monitoring and Erythropoietin to reduce neuronal damage. This has given them satisfactory results in terms of mortality and neurodevelopmental outcome. She had been to Georgetown University Hospital, Washington DC,2015, as GIANI Scholar Awardee(By AAP and NNF), appreciating her research work and community level works. She is now working as Unit Incharge, examiner for Fellowshipexam for Doctors and Nurses in Neonatology, also Board of Advisor for Public-Private Partnership(VIJINAP 2016) to upgrade our government hospitals to meeting health demands of our society. Conduct regular workshops/CME for doctors and nurses to keep them updated.

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Endothelial microvesicles in patients on extracorporeal membrane oxygenation: Potential markers of systemic inflammation and organ dysfunction?

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Introduction & Aim: Inflammatory response influences mortality and morbidity. Processes leading to a systemic inflammation are associated with endothelial injury. Endothelial cells release microvesicles and several other biomarkers which can be used as diagnostic tools for detection and treatment of inflammatory response. There is limited information regarding endothelial dysfunction in newborns. Aim of our study was to explore microvesicles in critically ill newborns.

Methods: Microvesicles were measured in newborns on extracorporeal membrane oxygenation (ECMO) and compared to samples of healthy term newborns. The total microvesicle count and number of surface antigen-specific microvesicles was determined by flow cytometry (BD FACS CantoII). The plasma concentration of cell-derived microvesicles (MV) was measured using annexin V labeling of the microvesicles and the endothelial origin of microvesicles were determined using lineage specific antigen labelling of endothelial cell/microvesicle markers (CD105, CD31, CD309, MadCAM).

Results: 13 newborns on extracorporeal membrane oxygenation (ECMO group) and 13 healthy term newborns (Term group) were included. There were no significant differences in gestational age, birthweight and gender between groups. The concentration of markers shows Table 1.

Conclusion: Soluble markers of inflammation and concentration of microvesicles were significantly increased in ECMO group. We did not detect significant differences in the concentration of endothelial specific microvesicles between the groups, with the exception of mucosal endothelium marker MadCAM. The understanding of endothelial cell response during inflammation may help to find biomarkers of early detection of neonatal diseases.

Biography

V Vítková graduated from Faculty of Medicine Charles University, Prague in 2012 and started her PhD studies in 2016 at Charles University, Department of Pathological Physiology. Currently, she works as a Pediatrician/Neonatologist in Department of Neonatology, Thomayer Hospital, Prague, Czech Republic

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Unusual presentation of cow milk protein allergy in a neonate

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Cow's Milk Protein Allergy (CMPA) represents the majority of food allergies in children, especially in early childhood, with an incidence of up to 3% in the first year of life. Indeed, 90% of patients develop CMPA before they reach 3 months of age and often within a week of introducing cow's milk protein into their diet. Classical presentation may involve variable gastrointestinal symptomatology, inclusively regurgitation, vomiting, diarrhoea or constipation, among other non-gastrointestinal signs and symptoms. We report an unusual presentation of CMPA in a previously healthy eight day old formula fed baby girl, who was admitted due to multiple episodes of vomiting followed by a single instance of bile-stained vomiting associated with maroon-coloured blood stained stools on the first day of admission. Physical examination was non-remarkable. Initial diagnostic investigation included a water-contrast upper gastrointestinal tract study with follow-through and delayed films, to exclude mid-gut malrotation as sinister surgical pathology. Elimination of ominous pathologies from the differential diagnosis and cessation of symptoms with interruption of formula feeds led to a working diagnosis of CMPA. Reintroduction of hypo-allergic formula feeds elicited no relapse of symptoms, and the patient improved dramatically, further supporting this diagnosis. High index of suspicion is mandatory in management of such challenging cases.

Biography

Jamie Grech completed undergraduate medical education at the University of Malta in 2016, before completing a Postgraduate Certificate in Child Welfare and Wellbeing from Oxford Brookes University. He is currently reading for a Master of Science degree in Neonatal Medicine at Cardiff University while undergoing Foundation Programme training at Mater Dei Hospital, Malta.

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Antenatal bleeding esogastritis: A case report

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Neonatal esogastritis is relatively common and is characterized by the contrast between severity of clinical and endoscopic features and its usually rapid favorable evolution. The first clinical symptoms can appear very early, sometimes in the first hours of life. We report on a case of neonatal esogastritis by the antenatal onset of hemorrhage. The mother, primigravida without significant past medical history, presented at a term of 37 gestational weeks and 5 days for metrorrhagia. An emergency caesarean delivery was decided for suspicion of acute abruption and fetal distress. The amniotic fluid was dark blood stained. Placenta was normally inserted without wound nor abruption. Uterus, tubes and ovaries were all intact. The eutopic newborn had Apgar score of 8 at 1mn and 9 at 5mn despite a double circular cord. Melena coated with red blood was noted from the first minutes of life and the nasogastric aspiration brought a hematic fluid. Hemodynamic state was stable. There was no other clinical anomaly besides a transient tachypnoea. Homeostasis exams were normal and so abdominal doppler ultrasound. Endoscopy done at H60 of life showed a congestive esogastritis. Bleeding stopped after four days of proton pump inhibitor with stabilization of hemoglobin at 12 g/dl. Enteral feeding was then introduced without incident and treatment continued for 1 month. Etiopathogenesis of neonatal esogastritis is still poorly understood. Our observation by associating fetal distress due to circular cord and antenatal digestive bleeding may highlight the importance of fetal distress as an etiological factor in neonatal esogastritis.

Biography

Ben Mrad S has completed her PhD from Tunis El Manar University and Postdoctoral studies from University School of Medicine of Tunis. She is a Pediatrician at the Department of Pediatrics and Neonatology of Habib Bougatfa University Hospital. She accomplished complementary studies in inherited Metabolic Diseases in 2016 and in Pediatric Dermatology in 2013. She has published many papers in reputed journals.

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Maternal and neonatal health consequences of education and counseling services for the pregnant with preeclampsia risk and their effects on self-efficacy level

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We determined maternal & neonatal health consequences of education and counseling for the pregnant with preeclampsia (PE) risk & effects of those on self-efficacy level & healthy lifestyle behaviors. Forty seven pregnant were in the study group (SG) and 53 were in the control group (CG). PE risk determination form, self-efficacy scale (SES), healthy lifestyle behavior scale II (HLBS-II), self-monitoring form, postpartum (PP) assessment form, PE education booklet for necessary information were utilized in the course of collection of research data. Groups were monitored 4 times from 20th week of pregnancy, labor and PP follow-ups were performed. The women in SG were educated and counseled on PE. CG were subjected to standard care. HLBS-II score averages in both groups in the first monitoring were similar, while HLBS-II averages of the SG were found to be higher & significant in 2nd, 3rd and 4th monitoring sessions. SES averages of the pregnant in both groups was found similar in all of 4 monitoring sessions. CG experienced most of the severe PE symptoms, more than the SG. 1st and 5th min. apgar scores, weight & nutrition conditions were found to be similar between the infants in the SG & CG. PE developed in 7.6% of pregnant in CG and gestational hypertension developed in 6.3% of SG and 5.7% of CG. No difference in pregnancy problems & PP maternal and neonatal problems were found between two groups. Education and consultation provided to pregnant with PE risk contributes to acquiring healthy lifestyle behaviors and improvement of mother-infant health.

Biography

Meltem Ugurlu has completed her PhD at the age of 29 years from Gulhane Military Medical Academy. Her subject of study includes Prenatal/Postnatal Care, Obstetrics and Gynecology

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Father's experiences in postpartum period

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We evaluated father's experiences in postpartum period. Fatherhood can be a milestone in a man's life that comes with excitement and challenges. It is imperative to understand father's needs and experiences to provide appropriate support for them. Postpartum period often requires the experience of new emotions, role development, work and knowledge barriers to infant involvement, and a lack of father-specific support and resources for the fathers. Fathers express that it can be beneficial to know more about infant care, their role as a father, and potential relationship changes or strains that might be expected with their partners. Many of them feel disconnect between their partner's wishes, their employer's needs, and their family's economic situation. Also, many fathers feel sleep-deprived. And because of the long working hours they can spend less time with their baby. Unfortunately, many fathers perceive and concede that their needs are unimportant, which hinder seeking out and requesting information. Indeed, many fathers report poor social support systems in the postpartum period. These absences could create emotional detachment from their family and unhappiness. Postpartum depression is a growing mental health concern in new fathers. Nurses can be the connection for fathers to primary health care and advocate for improved, father-focused postnatal programs. They should involve fathers in educational programmes and they can use real babies by inviting experienced parents to antenatal and postnatal educational programs. Different ways of providing informational support in the form of mobile health apps can be considered. Also, DVDs can be used for giving information.

Biography

Meltem Ugurlu has completed her PhD at the age of 29 years from Gulhane Military Medical Academy. Her subject of study includes Prenatal/Postnatal Care, Obstetrics and Gynecology

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Extremely preterm infant skin care: A transformation of practice aimed to prevent harm

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Background: The skin of extremely preterm infants is underdeveloped and has poor barrier function. Skin maintenance interventions initiated in the Neonatal Intensive Care Unit (NICU) have immediate and lifelong implications when the potential for infection, allergen sensitization, and altered aesthetic outcomes. In addition, the high level medical needs of extremely preterm infants demand skin level medical interventions that too often results in unintended skin harm.

Purpose: We describe the use of a harms prevention, or consequence-centered, approach to skin care which facilitates safer practice for extremely premature infants.

Method: Neonatal and pediatric Advanced Practice Registered Nurses (APRN) came together for monthly meetings to review the evidence around best skin care practices for extremely preterm infants, with an emphasis on reduction of skin harm. Findings were focused on the population of interest and clinical implementation strategies.

Findings: Skin care for extremely preterm infants remains overlooked by current literature. However, clinical practice pearls were extracted and applied in a manner that promotes safer skin care practices in the NICU.

Implications for Practice: Gentle adhesives, such as silicone tapes and hydrogel backed electrodes can help to reduce medical adhesive related skin injuries. Diaper wipes are not appropriate for use among extremely preterm infants, as many ingredients may contain potential allergens. Skin cleansers should be pH neutral to the skin and the prophylactic use of petrolatum based emollients should be avoided. Deanna Elizabeth Johnson's Presentation would focus on the Background and Implications for Practice.

Implications for Research: Further exploration and understanding of skin care practices that examine issues of true risk versus hypothetical risk of harm.

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Diagnosis of abnormally invasive posterior placentation: The role of MR imaging

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Abnormally invasive placentation is becoming more common with a recent increase in Cesarean sections and maternal age, among other risk factors. Ultrasonography is the first line-imaging, but it can be difficult to diagnose when limiting factors are present. Failure to recognize this serious placental abnormality precludes us from making the appropriate plan for the delivery and consequently can lead to fatal results. In this report, we present a case in which magnetic resonance imaging was used to diagnose posterior placenta increta missed by multiple sonographic examinations in a patient with previous myomectomies, and we also include a review of the literature on this topic. It is our conclusion that magnetic resonance imaging is superior to sonography to diagnose abnormally invasive placentation in cases of posterior placenta previa and high pretesting probability.

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From preemie to young adult: A retrospective look at parenting over a twenty-six year period**Laura Miller**

March of Dimes Foundation, USA

Have you ever thought to yourself, “I wonder what happened to that family, once they left the neonatal intensive care unit? How did the family cope, or how did the infant progress, once they got home?” Every year, thousands of infants and their parents and families spend days, weeks or months in a hospital unit, but once they transition to home, we often lose track of them. Through pictures and stories, Laura will share her personal journey, a long-range view of her life, and of her 27-week twin sons, after their NICU (Neonatal Intensive Care Unit) experience. You’ll hear how a six-month NICU stay impacted every aspect of their lives. Laura will talk candidly about post-traumatic stress, disabilities, infant loss, mental health, adaptive technology, navigating through the public school system, and general coping and adapting through a traumatic period in time. Strategies to support NICU families during and after the NICU stay will be discussed. In addition to her personal story, Laura will share quotes and comments from dozens of parent interviews, illustrating common themes and experiences shared by many NICU parents, including a discussion on how the minor co-morbidities impact the child in their early and late adolescence. From a parent’s perspective, the NICU experience is a powerful one, which many times changes the course of one’s life and career. This session reveals the real-life struggles of NICU families rarely talked about.

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Early onset sepsis of the newborn: Antimicrobial stewardship tools and challenges

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Early Onset Sepsis of the newborn remains a diagnostic challenge due to its nonspecific presentation, rarity, and high associated mortality without prompt treatment. However, current guidelines may lead to the treatment of many uninfected infants, which opens the door to potential medication adverse effects, development of antimicrobial resistance, separation of mother and infant, as well as increased health care costs. After its initial development and publication, the Kaiser-Permanente neonatal sepsis calculator has been studied for its ability to safely lower antibiotic use in the neonatal population. The sepsis calculator is designed to use objective data available at birth to give infants ≥ 34 weeks of age a calculated risk score of bacterial sepsis, and offers monitoring and treatment recommendations based on the evolving clinical status of the neonate. This presentation will review recent advances in management of early onset sepsis using the sepsis risk calculator, and challenges to further improving antimicrobial stewardship in the neonatal population.

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Congenital toxoplasmosis: Implementation of a surveillance system in France**Pr I Villena**

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The national prevention programme for congenital toxoplasmosis in France has been in place since 1978; however, no data is available concerning the annual number of cases. In order to estimate the perinatal burden of this infection, and to follow the impact of the national prevention programme, a surveillance system was implemented in 2007 by the National Reference Centre on Toxoplasmosis with support of Santé Publique France. We recommended a laboratory-based surveillance system as being the most adapted for the surveillance of this infection. Several surveys were undertaken, in order to define the network of contributors, and optimize the exhaustively of the surveillance. The surveillance system put in place, named ToxoSurv, is based on a network of laboratories specialized in prenatal and postnatal diagnosis and medical biology laboratories that occasionally perform a confirmatory diagnosis of this infection during the neonatal and postnatal periods. Cases are declared to the National Reference Centre for Toxoplasmosis via the Internet or by the sending of a paper form. The data produced by this surveillance will be used to produce an annual report destined for concerned health professionals. The surveillance system for congenital toxoplasmosis has been active since June 2007 and provided valid prevalence data for congenital toxoplasmosis in France. The number of congenital toxoplasmosis appears to be stable in France since 10 years with few cases of severe toxoplasmosis and high proportion of subclinical forms. We also present French studies for treatment of congenital toxoplasmosis in antenatal and neonatal period.

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The effect breastfeeding counseling on self-efficacy and continuation breastfeeding among primiparous mothers in Iran

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Background: Breastfeeding is one of the most important factors in ensuring the health of infants. Self-efficacy of mothers is effective on promotion and continuation of breastfeeding. The aim of this study was to determine the effect of lactation counseling on self-efficacy and continuation of breast-feeding in primiparous mothers.

Methods: This study was a randomized clinical trial. In this study, 104 qualified primiparous women after vaginal delivery were randomly assigned into two groups (case and control). The data collected through a questionnaire that included demographic characteristics, self-efficacy in breastfeeding, and continuation of Exclusive Breast Feeding (EBF). Before the consultation questionnaire was completed by both groups. The four weekly sessions during a month and three monthly telephone follow-ups were conducted in intervention group. While the control group received only routine care. After fourth month of delivery, the two groups were re-examined. Data analyzed using the independent t-test, paired t test.

Results: Two groups had no significant differences in demographic variables. Before consultation, there was not any significant difference on self-efficacy and breastfeeding between intervention and control group. After consultation, there was a significant difference on self-efficacy and breastfeeding between intervention and control group. The mean score of self-efficacy and EBF have increased significantly in intervention group ($P < 0.01$). However, a significant decrease was observed in the control group ($P < 0.01$).

Conclusions: With regard to the role of consulting on self-efficacy and breastfeeding continuation, it suggests that this consultation is scheduled to take place in hospitals.

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Antenatal steroids-Where are we?

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Early steroids studies in fifties and sixties involved animals and the effects they had upon various organs. It was not until in 1969 when GC Liggins, while studying the effects of steroids upon the initiation of labour in fetal lambs, that he noticed the steroids treated lambs not only had initiation of labour but they also had relatively more mature lungs and better survival. This further led to studies, which directly showed the effect of steroids upon maturing lungs by accelerated surfactant appearance. In 1972, landmark study by GC Liggins and RN Howie showed that steroids could reduce the incidence of RDS in preterm neonates. This study led pathway to numerous studies all over the world showing effects of steroids in maturation of lungs. However, they also showed caution regarding the potential adverse effects. In 1990, systemic review by P Crowley clearly showed the beneficial effects of steroids in reduction of RDS with minimal adverse effects. Further, in 1994, consensus statement by NIH gave the current recommendation and regimen for antenatal steroids for preterm deliveries. Further consolidation of the positive effects of steroids was done by meta-analysis by D Roberts in 2000 and further in 2006. However, despite clear evidence of beneficial effects, 2014 study in Lancet showed that the use of corticosteroids in lower income countries like Nepal, Afghanistan, Niger, and Congo was low. The use of antenatal steroids must be encouraged especially in lower income countries for reducing the neonatal mortality rates in these countries.

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An alternative approach to gastric emptying time scintigraphy and investigation of clinical importance

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Introduction: Gastric emptying time scintigraphy is an important functional investigation test for evaluating the gastric mechanical functions. Nevertheless this test is not ideal because of the proposed meal, energy content, quantity, deficiencies in composition standardization and also lack of practicality in preparation and a application. For this reason, there are not internationally accepted normal values of the test. The aims of this study are to investigate the potential role of oral barium solution, used as radiological contrast in gastric imaging, mixed with Technetium-99m macro aggregate albumin (Tc-99m MAA) as a standart test meal in gastric emptying time scintigraphy and to evaluate its potential importance in clinical investigations by imitating conditions of gastroparesis via applying atropine.

Methods: In this study, 14 male New Zeland rabbit 2000-2500 gr weighted were used. Each rabbit was fed with 1 mCi Tc-99m MAA mixed with 40 gr oral barium solution (1 mg/ml, Radiobarit solution, Reccordati medical) by nasogastric catheter. Rabbits stabilized on a wood floor without anesthetic medication were scanned by gamma camera for one hour dynamically (1 frame/minute). A few days later, the same rabbits were scanned under the same conditions after 1 mg atropine injection to imitate gastroparesic condition. The area of interest was drawn around the stomach in the first and last minute anterior and posterior projection images and counts were obtained and geometric averages were calculated. Gastric emptying rate was calculated by the formula: $(1.\text{min. count} - 60.\text{min. count}) / 1.\text{min. count} \times 100$ and baseline and post-atropine differences were investigated by Wilcoxon signed rank test.

Results: When the dynamic images were examined, barium was found to cause controlled drainage of Tc-99m MAA from the stomach. The basal gastric emptying time was mean \pm SD:74,24 \pm 8,32, after atropine injection the values were decreased to mean \pm SD:50,34 \pm 12,37. The %25-75 percentile values in basal group were %67,15-80,24, after atropine injection these values decreased to % 41,34-62,11 and this decrease was determined to be statistically significant ($p < 0.001$).

Conclusions: Oral barium solution which has no side effect as it is not absorbable in gastrointestinal system and used as contrast agent in gastrointestinal system imaging was mixed with Tc-99m MAA in this study. It has been understood that this standard mixture in regards of calorie, content and quantity, which prevents the radioactive solution from being suddenly discharged from the stomach, has potential to be used in gastric emptying studies and to provide useful information in gastroparesic conditions.

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Rapid vs slow advancement of feeds in preterm babies less than 34 weeks in incidence of NEC and feed intolerance

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Objectives: To evaluate whether preterm neonates less than 34 weeks at birth receiving rapid enteral feeding advancement at 25-30 ml/kg/day to attain full feedings (180 ml/kg/day) and those receiving slow enteral feeding advancement at 15-20 mL/kg/day (180 ml/kg/day) are at increase in the incidence of necrotizing enterocolitis or feed intolerance.

Methods: The Study design is Retrospective cohort study. The Setting is Level III Neonatal Unit in Southern India. The subjects are Neonates born at < 34 weeks of gestational age and admitted to the NICU during study period were enrolled. The outcome is Mortality and major morbidity – NEC as per Bell staging, incidence of feed intolerance.

Results: Both groups had similar baseline characteristics. The average gain in weight, length and head circumference were significantly lower in the slow feeding group as compared rapid feeding group. The days to reach birth weight was less in rapid feeding group ($p = 0.04$). It was inferred that duration of hospital stay and parenteral nutrition was less in rapid feeding group was less compared to slow feeding group ($p = 0.04$). Rapid feeding group does not have increased episodes of feed intolerance or NEC compared to slow feeding group.

Discussion: The incidence of ROP in India and worldwide was comparable to our study. 61 babies weighing above 1500 grams were diagnosed with ROP. According to AAP screening guidelines, we would have missed the babies who weighed more than 1500 grams with stormy neonatal course. Safe level of oxygen usage has not been defined. Assisted ventilation and RDS were independent risk factors which was comparable to other studies.

Conclusions: Our results support rapid enteral feeding protocols (increments of 25-30 mL/kg/day) for enteral nutrition of stable preterm neonates less than 34 weeks of gestation.

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Gastric aspirate shake test in preterm neonates to predict respiratory distress syndrome

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Introduction: Respiratory Distress Syndrome (RDS) is a major cause of mortality and morbidity in preterm babies. Early prediction of RDS is vital in the management of preterm babies. Among the various test, the gastric aspirate shake test is a simple bedside test to predict RDS.

Objective: To evaluate whether the shake test performed in the gastric aspirate sample in preterm babies can predict the likelihood of respiratory distress syndrome of prematurity.

Methods: A prospective hospital-based cohort study conducted at the NICU of Kathmandu Medical College for 6 months from May to October 2014. All live born babies greater than or equal to 26 weeks and less than 37 weeks (36+6) gestation were included in the study. Neonates who could only be seen after 1 hour of life, neonates in whom gastric aspirate samples < 0.5 ml were obtained or those samples mixed with blood or meconium, neonates who were fed before the procedure, neonates with severe congenital anomalies incompatible with life and those with parents denying to give consent were excluded from the study. Babies were defined to have respiratory distress syndrome if the neonate develop any two of the clinical signs of respiratory rate > 60/min, expiratory grunting, suprasternal, intercostal retraction or cyanosis within 6 hrs of life and persisted for >24 hours with chest xray showing hypoaeration, diffuse reticulogranular pattern with air bronchogram. The shake test results were read as positive (if complete rim of bubbles were present across the surface of the fluid), intermediate (an incomplete rim of bubbles were present across the surface of the fluid), negative (if no bubbles were seen). The results of the shake test were then compared with clinical diagnosis of neonatal respiratory distress syndrome.

Results: Among the 50 preterm babies who were enrolled in the study, 15 (30%) babies developed RDS. Similarly, shake test predicted 48% as mature (positive shake test) and 34% intermediate and 18% as immature (negative shake test). The sensitivity, specificity, positive predictive value (immaturity), negative predictive value (maturity) by shake test was 93.3%, 65.7%, 53.8% and 95.8% respectively.

Conclusions: Gastric aspirate shake test in preterm babies is a simple yet reliable test for prediction of fetal lung maturity and therefore can be used routinely in resource limited settings to predict RDS.

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Stercoral perforation of the ileum in a very low birth weight infant: A case report**Eun-jung Koo**

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Stercoral perforation is rare spontaneous rupture of the bowel that is associated with a high risk of mortality. Cases of Stercoral perforation have typically been reported in adults, with the colon being the most common site of perforation. There has been no case report of Stercoral perforation in infants. In this case report, we describe a Stercoral perforation in the distal ileum in a preterm male infant. An 11-day-old male was referred with complaints of vomiting and abdominal distension. Dilatation of bowels with fecal impaction was found on simple abdominal radiographs. Abdominal distension was aggravated with no effect of glycerin enema. Explorative laparotomy was performed and Stercoral perforation of the distal ileum was confirmed.

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Cell-specific immuno-localization of progesterone receptor alpha in the rabbit ovary during pregnancy and after parturition**Mahmoud Abd-Elkareem**
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Progesterone receptor alpha (PRA) has a central coordinator role in the ovarian functions in mammals. The aim of this study was to investigate the immunolocalization of PRA in the rabbit ovary during pregnancy and after parturition. The rabbit ovary during pregnancy and after parturition had moderate cytoplasmic and moderate to intense nuclear PRA immunostaining in the ovarian surface epithelial cells, stromal cells and interstitial gland cells. The PRA was also present in granulosa cells and theca interna cells of the growing, small antral and mature Graafian follicles. Theca interna cells of the atretic antral follicle in addition to endothelial and fibroblast cells had PRA immunoreactivity. The PRA were also observed in the theca externa smooth muscle-like cells of the growing and antral follicles and in the telocytes. In the present study, the corpora haemorrhagica and early developing corpora lutea had, slight cytoplasmic and nuclear PRA immunostaining in the large lutein and small lutein cells. The endothelial cells of the corpora haemorrhagica and corpora lutea had an intense nuclear PRA immune signal. The corpora lutea at an advanced stage of development had moderate cytoplasmic and nuclear PRA immunostaining in the large lutein cells and intense nuclear PRA immunostaining in the small lutein cells. The regressed corpora lutea did not have PRA immunostaining in the apoptotic large lutein cells and moderate cytoplasmic and intense nuclear PRA immunostaining in the small lutein cells.

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The investigation on the protective role of regulatory T cells in LPS induced fetal liver damage in late pregnant mice**Muhammad Siddiq and Li Liu**

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To evaluate the role of regulatory T cells (Tregs) on the liver inflammatory response in a lipopoly- saccharide (LPS)-induced preterm birth mouse model. The LPS-induced preterm birth mouse model was established. Before LPS treatment, Tregs were insulated from pregnant mice and inoculated into different pregnant mice. The expression of Heme oxygenase-1 (HO-1), fork head family transcription factor (Foxp3) and interleukin-6 (IL-6) in liver, were examined by real-time reverse transcription polymerase chain reaction and western blotting. The mRNA and protein expression levels of, HO-1 and Foxp3 in liver from LPS-treated mice was considerably reduced equated with the controls, while the adoptive transfer of Tregs expressively rescinded the changes in the expression of the above said elements after LPS treatment. Fascinatingly, the expression of IL-6 in the liver was meaningfully elevated after LPS treatment, and the adoptive transfer of Tregs obstructed this effect. The preterm birth was remarkably persuaded after maternal LPS exposure, and affected the expression of Foxp3, HO-1 and IL-6 in liver tissue. Furthermore, the adoptive transfer of Tregs absolutely abolished the changes in the expression of the above factors after LPS treatment. However, further study is needed to understand the mechanism of Tregs to prevent the liver inflammation in preterm birth in human.

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Interpregnancy interval and the risk of preterm birth: A case-control study of infants born at Al-sadaqa general teaching hospital, Aden, Yemen

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Background: Interpregnancy interval (IPI) is a known risk factor for preterm birth. The aim of this study was to assess the relationship between IPI and spontaneous preterm birth, and to identify the influence of confounding variables such as socioeconomic status, maternal age, and reproductive history.

Methods: This is a hospital-based, case-control study conducted in the department of neonatology, Al-Sadaqa General Teaching Hospital, Aden, during June to September 2011. A case was defined as infant born spontaneously before 37 weeks of gestation and control was a next eligible infant born between 37-42 complete weeks of gestation. Comparison between groups was assessed by statistical analysis and odds ratio were calculated for confounding factors.

Results: A total of 100 preterm (cases) and 100 full-term (controls) infants were evaluated for the effects of IPI. Intervals of both <12 months and 12- 24 months were significantly associated with preterm births compared to control (37% vs 12% and 73% vs 46% respectively, all $p<0.05$). The risk of preterm birth was higher in association with low number of antenatal care visits (OR=10, 95% CI=1.62-61.46, $p=0.018$), younger women's age (OR=8, 95% CI= 1.35-8.4, $p=0.001$), non-educated mother (OR=7.92, 95% CI=2.49-25.22, $p=0.002$) and gravid 2-3 (OR=6.5, 95% CI= 5.06-53.8, $p=0.001$). Significant risk was also observed among mother with low socio-economic status and residents of rural areas (all $p<0.05$).

Conclusions: Short IPI is significant risk factors for preterm birth. This highlights the importance of counseling women in childbearing age to wait at least 24 months between delivery and subsequent conception.

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Shared antenatal care to increase utilization of maternity services

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The objective of the study, now published, was to identify factors, which may have contributed to the decline in the utilisation of maternity services at the tertiary institution in Benin. The cross sectional study was undertaken at the antenatal units of the University of Benin Teaching Hospital (UBTH), Central Hospital Benin (CHB), Catholic Maternity Hospital (CMH) and the Anglican Women Hospital (AWH), between the months of June and September 1998. 1200 pregnant women at various gestational ages, attending the antenatal clinics were interviewed using a structured questionnaire. The mothers also responded to open-ended questions. The inquiry included personal data, place of domicile, information on previous and present antenatal booking and maternity service utilization. 950 adequately completed questionnaires were analyzed. All the patients attended the clinic from within the town. The catchment area for each of the maternity units was not clustered, nor showed any pattern of delineation by place of patients' domicile. Patients attended any antenatal clinic from various locations in town, indifferent of the distance or proximity to their residence. The reasons for not attending antenatal care in UBTH are multiple and in various combinations. A large number of the patients (71.47%) that have no previous delivery experience with UBTH, did not book with the centre because of the cost of services (19.89%), poor attention (27.37%) and distance from place of residence (24.21%). 23 patients (50.0%) of all the women that have delivered in UBTH complained of cost. 295 mothers (31.05%) were satisfied with their present centres and do not want a change. Included in this number that were satisfied are 12 (21.42%) women that have delivered previously in UBTH. Patients' satisfaction and aversion for obstetric interventions could be improved by shared antenatal care to increase utilisation of maternity services. We recommend the introduction of a midwife-managed care unit in the department, for the management of low-risk mothers.

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