Facility of Medical Sciences
Health Research Day
December 2, 2010

ABSTRACTS
Faculty of Medical Sciences:
Health Research Day Abstracts

Compiled for the Health Research Day of the Faculty of Medical Sciences (FMS), The University of the West Indies (UWI), St. Augustine Campus, Trinidad and Tobago, held on December 2, 2010

©2010 The Faculty of Medical Sciences
Compiled, designed and indexed by the Medical Sciences Library, The University of the West Indies, St. Augustine, Trinidad and Tobago
# Table of Contents

## A. Centre for Medical Sciences Education


A2. The Faculty of Medical Sciences, St. Augustine, and its Contribution to Human Resource Development in the Caribbean - *M Lewis*

A3. Students’ Perceptions on the New Para-Clinical Sciences Curriculum (2009-10) - *B Sa, S Williams, C Rao, L Pinto Pereira*

A4. Students’ Rating on Effectiveness of PBL and Skill Training: the Pre-Clinical years - *B Sa, V Narayansingh, S Williams, C Rao*

A5. Computer-readiness of Health Care Providers to Participate in Distance Learning Including Computer Based Training and E-learning in Trinidad & Tobago - *Z Ali, GY Deane*

## B. School of Medicine - Clinical Medical Sciences

B1. A Study of Domestic Violence in an Antenatal Clinic Setting in a Teaching Hospital in Northwest Trinidad - *AN Jaggat, SS Ramsewak*

B2. The Impact of Hyperventilation on the Outcome of Intensive Care Patients with Brain Injury - *F Mohammed, S Hariharan, D Chen*

B3. An Analysis of Cranial CT Scan Findings in Head Trauma Patients in Trinidad - *FS Rampersad, DA Rampersad, O Khan, P Maharaj, A Sinanan*

B4. The Elderly in Trinidad: Health, Family Life and Economic Issues - *JM Rawlins, D Simeon, D Ramdath, D Chadee*

B5. Evaluating Cardiovascular Risk Factors in Asymptomatic Individuals in a Trinidadian Community - *K Singh, I Ogeer, R Bacchus and K Mungrue*


B7. The Occurrence of Left Ventricular Hypertrophy in Normotensive Individuals in a Community Setting in North-East Trinidad - *R Bacchus, K Singh, I Ogeer, K Ragoonanan, K Mungrue*

B8. Surgical Outcomes of a Cataract Surgery Project by a Visiting Surgical Team in Trinidad and Tobago - *S Persad, R Bhola, M Ramjitsingh-Samuel, D Murray*

B9. The Occurrence of Pulmonary Hypertension in Sickle Cell Patients with or without a Restrictive Ventilatory Defect - *S Sharma, M Rios, J Osadebay, I Istor, Moore-Clarke, W Charles, SK Charles, J Chin, P Maharaj, T Seemungal*

B10. Health-Related Quality of Life (Hrql) of Patients Undergoing Maintenance Haemodialysis in Trinidad and Tobago - *DS Sealey, C Ramcharan, S Ragoobar, C Railwah, D Ragoonanan, S Rafeeq, C Johnson, A Thornton, S Ramadhin, S Persaud*

B11. Long Term Erythromycin Decreases COPD Exacerbations - *T Seemungal, M Rios, JA Wedzicha*
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>One Year Audit of Mortality in Sickle Cell Patients Admitted to the</td>
<td>T Seemungal, M Rios, A Sahadeo, K Dindial, SK Charles</td>
</tr>
<tr>
<td></td>
<td>Port of Spain General Hospital</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Self-management of Diabetes in Trinidad and Tobago</td>
<td>G Legall, S Teelucksingh, J Toney-Duncan, SM Swarath, G Thannoo, S Mohammed, A Toolste</td>
</tr>
<tr>
<td></td>
<td>Patients in Trinidad and Tobago: 2005-2009</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Dementia Survey in Older People in Trinidad and Tobago: A Preliminary</td>
<td>N Baboolal, G Davis, R Stewart, A McRae</td>
</tr>
<tr>
<td></td>
<td>Report</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Isolation and Characterization of Sylvatic Mosquito-Borne Viruses in</td>
<td>AJ Auguste, AP Adams, NC Arrigo, R Martinez, D Travassos, AP Rosa, AA Adesiyun, DD Chadee,</td>
</tr>
<tr>
<td></td>
<td>Trinidad: Enzootic Transmission and a New Potential Vector of Mucambo</td>
<td>RB Tesh, CV Carrington, SC Weaver</td>
</tr>
<tr>
<td></td>
<td>Virus</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Spatio-Temporal Dynamics of Dengue Viruses in the Americas</td>
<td>OM Allicock, P Lemey, AJ Tatum, OG Pybus, SN Bennett, BA Mueller, MA Suchard, JE Foster,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CVF Carrington</td>
</tr>
<tr>
<td>23</td>
<td>Comparison of Methylation Status of the Insulin Receptor Substrate 2</td>
<td>C Cuthbert, JEF Foster, DD Ramdath</td>
</tr>
<tr>
<td></td>
<td>Genes among the Major Ethnicities of Trinidad</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Macrocarpon</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Adiponectin and their Relationship with Obesity, Inflammation, Blood</td>
<td>BS Nayak, R Ramdeen, L George</td>
</tr>
<tr>
<td></td>
<td>Lipids and Insulin in Type 2 Diabetic and Non-Diabetic Trinidadians</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BS Nayak, R Ramdeen, L George</td>
</tr>
<tr>
<td>26</td>
<td>Assessment of the Efficacy of Anthocyanin Supplementation in Preventing</td>
<td>S Singh, DD Ramdath</td>
</tr>
<tr>
<td></td>
<td>Abnormalities of Insulin Signaling in Sucrose Fed Rats</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>BS Nayak, R Ramdeen, L George</td>
</tr>
<tr>
<td>27</td>
<td>Knowledge of the Effects of Smoking on Oral Health and the Attitudes</td>
<td>H Al-Bayaty, RL Balkaran, E Prayman, RS Naidu</td>
</tr>
<tr>
<td></td>
<td>among Dental Patients towards the Involvement of Dentists in Smoking</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cessation Activities in Trinidad</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Self Perceived Clinical Competencies and Proficiencies of Internationally Trained Dentists Completing an Advanced Education in General Dentistry Residency</td>
<td>SM Marchan and WAJ Smith</td>
</tr>
<tr>
<td>29</td>
<td>Parent Satisfaction with Emergency Dental Services at a Pediatric Dental Clinic</td>
<td>VV Ramroop, A Harracksingh, RL Balkaran, RS Naidu</td>
</tr>
<tr>
<td>30</td>
<td>The Evaluation of Video-Clips as a Teaching Aide</td>
<td>WAJ Smith, RN Rafeek, S Marchan, A Paryag</td>
</tr>
</tbody>
</table>
E. School of Pharmacy


E2. Botanical Source-Dependent Physical and Mechanical Properties of Starch as Potential Monitor of Pharmaceutical Product Quality - AS Adebayo, CK Riley, OA Itiola

E3. Continuing Education Needs of the Caribbean Association of Pharmacists - RM Extavour, DS Pellow, B Scantlebury


E5. The In Vitro Efficacy of Antifungal Impregnated Biodegradable Bone Delivery Systems - PI Sealy, S Chapman, JD Cleary

E6. Attenuation of MBL Ligand Associated Fungal Infection Mortality - PI Sealy, JD Cleary, E Swiatlo

F. School of Veterinary Medicine


F2. Efficacy of Commonly Used Anthelmintics on Gastro-Intestinal Nematodes of Sheep in Trinidad - N George, K Persad, R Sagam, AK Basu, VN Offiah, AA Adesiyun, W Harewood

F3. A Health Survey of Captive Geochelone Carbonaria in Trinidad - G Indar, C Jerry, R Rampersad, M Reed

F4. A Comparison of a Quantitative Real Time PCR and Reverse Line Blot Hybridization in Detecting “Candidatus Mycoplasma haemominutum”, Mycoplasma haemofelis and “Candidatus Mycoplasma turicensis” Infections of Domestic Cats in Trinidad and Tobago - K Georges, CD Ezeokoli, OAE Sparagano, N Seeersad, AM Pottinger, T Auguste, S Tasker

F5. Histoplasmosis in a Domestic Shorthaired Cat in Trinidad - K Muñoz, N Mootoo, I Pargass


F7. The Effects of Different Stabling Methods on the Lower Airways of Thoroughbred Horses in Trinidad - MES Branday, Z Bakos

F8. Platynosomum Fastosum Kossack, 1910 (Trematoda, Dicrocoeliidae) Infection of a Cat in Trinidad - SAS Montserin, K Muñoz, A Basu, R Seebaransingh

F10. Reference Intervals for Haematological and Serum Chemistry Parameters in Categories of Goats in Trinidad - PK Mokoka, SL Weekes


F12. A Comparative Study of the Blood Supply to the Brain of the Agouti and the Rabbit - S Robertson, A Bodilenyane, T Tshukudu, A Adogwa


F15. Surgical Management of Megacolon by Subtotal Colectomy in a Young Cat with Hind Limb Paresis - TN Ganesh, K Muñoz, A Hosein, T Auguste, N Mootoo, C Legall

F16. Femoral Head and Neck Excision (Fhne) Arthroplasty in Dogs – A Two-Year Study with Special Reference to Surgical Indication and Outcome - TN Ganesh, S Bridglalsingh

F17. Management of Equine Stromal Abscess - A Case Report - G Williams, S Montserrat

Indexes
A. Centre for Medical Sciences Education

A1.

An Analysis of Cognitive Interactions in Emergency Medicine Tutorials Employing Virtual Patients
J Wilson, I Sammy

Centre for Medical Sciences Education, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
Email: jacqui.wilson@sta.uwi.edu

ABSTRACT

**Background & Objectives:** Virtual patients (VPs) are interactive computer simulations that imitate clinical encounters, allowing learners to take on the role of the physician gathering data, diagnosing and making management decisions. There is insufficient evidence that simulation based technologies such as virtual patients can promote clinical reasoning. This study explored whether students demonstrated clinical reasoning during VP tutorials.

**Design & Methods:** Qualitative methods were applied within a case study design to collect and analyze data. One group of 13 graduate students enrolled in the University of the West Indies’ Diploma in Emergency Medicine programme were chosen based on an intensity sampling strategy. They were videotaped during three VP tutorials. From each tutorial, 15 minutes of group talk was coded using an interaction analysis scheme of five phases: comparing information; exploring dissonance; co-constructing knowledge; testing syntheses; and applying newly constructed meaning.

**Results:** About 50-60% of group talk consisted of sharing information; 20-40% consisted of exploring dissonance; 5-10% consisted of negotiating meaning; and 10-20% consisted of testing syntheses. No messages were coded as summarizing newly constructed meaning. The tutor spent >60% of time asking questions and lecturing. Students spent most time clarifying statements and disagreements. Students’ co-construction of knowledge and hypothesis testing increased with successive VPs.

**Conclusion:** Clinical reasoning is cognitive and collaborative. Group talk involved comparing information, exploring dissonance and testing syntheses rather than negotiating meaning. Negotiating meaning may be less necessary in a community that shares experiences and ways of addressing problems. Transfer of learning may be evidenced within other sessions or contexts.
ABSTRACT

Background and Objectives:
In its twenty years of existence the Faculty of Medical Sciences (FMS) has graduated 2,380 students from its undergraduate programmes. The FMS, University of the West Indies (UWI), St. Augustine campus, began teaching its undergraduate programme in October 1989, in three Schools: Medicine, Dentistry and Veterinary Medicine, and the first batch of students graduated in 1994. A four-year Pharmacy Programme commenced in 1995, producing its first graduates in 1999, and ten years later an accelerated Bachelor of Science in Nursing was started and saw its first graduates in 2006. The objective is to present a longitudinal study of the number of graduates from 1994 to 2008, and to highlight the number of doctors, dentists, veterinarians, pharmacists and nurses in the region and beyond, who have graduated from the programmes of the FMS.

Methods: Data were obtained by harvesting the names of graduates from the UWI, St. Augustine, graduation booklets, and by cross-checking administration records of the Faculty’s office.

Results: The study shows that fifteen of the sixteen contributing Caribbean territories have had graduates from the FMS, St. Augustine, with Anguilla the one exception. Other graduates have come from beyond the region, including 16 developed and developing nations.

Conclusion: The FMS, St. Augustine, serves a key role in providing health professionals for the region and has thus strengthened the human resource capacity in the health sector of most of the contributing territories of the Caribbean region though the vast majority of the undergraduates have been from Trinidad and Tobago.
Students’ Perceptions on the New Para-Clinical Sciences Curriculum (2009-10)
B Sa, S Williams, C Rao, L Pinto Pereira

Centre for Medical Sciences Education, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail address: bidyadhar.sa@sta.uwi.edu

ABSTRACT

Background: The former Para-clinical Sciences course, MDSC3310 was split into MDSC3311, 3312, 3313. Continuous assessment (CA) was by Progressive Disclosure Questions (PDQs) and examinations were semesterised. The erstwhile Skills Course (MDSC5280) included Para clinical Sciences Clerkships in Year 3 as (MDSC3314). We examined students’ perceptions of the new curriculum modeled by MDSC3311.

Methods: Using an anonymous exit questionnaire, 2009-2010 Year 3 students were surveyed. Domains examined were course content, integration, learning objectives specificity/ clarity, faculty availability / punctuality, learning resources facilities/availability, assessment methodology and problem based learning (PBL).

Results: Of 198 eligible students, 107 responded (54.04 % response rate), 96.2% were freshers, mean student age was 22.3 (SD=2.1) years, and female representation was higher (66.4%, n=71). Table - Course rating Good- Excellent (%)

<table>
<thead>
<tr>
<th></th>
<th>MDSC3311</th>
<th>MDSC3312</th>
<th>MDSC3313</th>
<th>MDSC3314</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>78.5</td>
<td>77.4</td>
<td>84.9</td>
<td>71.4</td>
</tr>
<tr>
<td>Integration</td>
<td>68.8</td>
<td>67.6</td>
<td>72.4</td>
<td>74.5</td>
</tr>
<tr>
<td>Specific objectives</td>
<td>66.4</td>
<td>66.3</td>
<td>63.6</td>
<td>51.4</td>
</tr>
<tr>
<td>Lecturer availability &amp; Punctuality</td>
<td>87.9</td>
<td>86</td>
<td>88.5</td>
<td>64.6</td>
</tr>
<tr>
<td>Resource availability</td>
<td>54.2</td>
<td>56.5</td>
<td>55.2</td>
<td>48.1</td>
</tr>
</tbody>
</table>

Students (86%) favor the PDQs as CA and end-of-semester examinations (84%). The MDSC3311 course was good, well delivered, with clear learning objectives (<60%). The PDQs tested course content (27%) and stimulated thinking (70%). One persistent exception tarnished lecturer commitment and availability. Pathology technical laboratory support was highly commended. Public Health and Primary Care faculty and course content were unsatisfactory.

Conclusions: The new curriculum was highly rated for content, integration, clarity of objectives, PBL and PDQ assessment. Critical examination of Public Health and Primary Care in the Para clinical Sciences curriculum is recommended.
A. Centre for Medical Sciences Education

A4.

Students’ Rating on Effectiveness of PBL and Skill Training the Pre-Clinical years
B Sa, V Narayansingh, S Williams, C Rao

Centre for Medical Sciences Education, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail address: bidyadhar.sa@sta.uwi.edu

ABSTRACT

Background & Objectives: During the pre and para-clinical years, curriculum is delivered through a hybrid mode of PBL. Students are offered skills training in the laboratory before they are exposed to clinical. This study attempts to explore how this learning environment is successful and what the students feel about it.

Methods: An anonymous questionnaire was administered to clinical students highlighting PBL, skills training, and duration of Pre & Para-clinical.

Results: Data was collected from 162 (56 year 4 and 106 year 5) students. Collected data were subjected to Mean and SD. Scores range from 1-7.

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Relevance and usefulness of PBL session</td>
<td>4.12</td>
<td>1.51</td>
</tr>
<tr>
<td>Q2. Learning approach</td>
<td>3.89</td>
<td>1.61</td>
</tr>
<tr>
<td>Q3. Team skills/behaviors</td>
<td>3.82</td>
<td>1.58</td>
</tr>
<tr>
<td>Q4. Cognitive and critical thinking skills</td>
<td>3.94</td>
<td>1.45</td>
</tr>
<tr>
<td>Q5. Relevance and usefulness of PBL problem</td>
<td>4.91</td>
<td>1.47</td>
</tr>
<tr>
<td>Q6. PBL approach should be abandoned or maintained as is</td>
<td>3.81</td>
<td>1.57</td>
</tr>
<tr>
<td>Q7. Clinical skills can be better learned with real patients in ward or clinic than simulated</td>
<td>6.23</td>
<td>1.37</td>
</tr>
<tr>
<td>Q8. Relevance and usefulness skills laboratory</td>
<td>3.77</td>
<td>1.86</td>
</tr>
<tr>
<td>Q9. Skills laboratory should be abandoned or maintained as is</td>
<td>3.51</td>
<td>1.70</td>
</tr>
<tr>
<td>Q10. Rating of basic science knowledge</td>
<td>3.93</td>
<td>1.21</td>
</tr>
</tbody>
</table>

Students 128(79%) prefer learning clinical skills in both skills laboratory and clinics. Students prefer 144(88.9%) history taking with real patients than simulated. Pre & Para-clinical course can be covered in 2years time 96(59.3%) while only 57(35.2%) endorsed for 3years. 118(72.8%) prefer 2years of Pre & Para-clinical & 3Years of clinical teaching.

Conclusion: The results of this research suggest that we need to rethink our curriculum especially in pre and Para-clinical years.

Acknowledgement: We wish to thank the students for volunteering their views (anonymously) on these issues.
A. Centre for Medical Sciences Education

A5.

Computer Readiness of Health Care Providers to Participate in Distance Learning Including Computer Based Training and E-Learning in Trinidad and Tobago

Z Ali 1,2, GY Deane 1

1Trinidad and Tobago Health Training Centre, Child Health Unit, The University of the West Indies, St. Augustine, Trinidad & Tobago.
2 Child Health Unit, Department of Clinical Medical Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad & Tobago.
E-mail: zulaika.ali@sta.uwi.edu

ABSTRACT

Background and Objectives: Trinidad and Tobago faces a shortage of adequately skilled healthcare providers (HPs). The upgrade of knowledge and skills of HPs require innovative approaches to training that are both effective and economical. Distance Learning (DL) is an opportunity to upskill large numbers of HPs in-situ, at an accelerated pace.

Design and Methods: An assessment using questionnaires and focus groups was conducted by the Trinidad and Tobago Health Training Centre (TTHTC) for staff employed by the Regional Health Authorities (RHAs) to assess the demand for Computer based training (CBT) and e-learning opportunities and the availability and accessibility of tools required for participation in these courses. Subsequently flyers advertising the distance learning (DL) course, “HIV Basics: ARV Treatment and Adherence Counselling”, and registration forms which included a participant’s readiness questionnaire were distributed via the RHAs during the period January 7th to January 31st, 2010.

Results: The advertisement garnered an instantaneous and overwhelming response, 221 healthcare providers completed the application/questionnaire to enroll in the DL course. The vast majority of respondents (greater than 97 per cent) had access to computers with CD-ROM drives and reliable internet access. Over 96 percent of the respondents were confident about using the computer and familiarity with the use of e-mail.

Conclusion: The results showed that the technology was accessible and there was a strong interest in and high demand for DL technology and training in spite of the little or no prior experience with this form of learning methodology.
Background and Objective: To determine the prevalence of domestic violence among pregnant women.

Design and Method: Domestic violence is significant in our antenatal population. World Health Organization data quotes physical violence among pregnant women in developing countries between 3 and 28%. Patients were asked to fill out a questionnaire. Participation was voluntary. Ethics approval was obtained.

Results: There were 196 participants. This sample size gave a 95% confidence interval and a confidence level of 7. Six participants chose not to respond to whether or not they were abused. Twenty-one percent of patients admitted to being abused. Within the group of victims 62.5% were abused prior to becoming pregnant, 32.5% were abused in prior pregnancies and 15% admitted to increased abuse during their pregnancy. Forty percent of patients said that they reported their abuse while 30% would leave their abuser if given the opportunity. Education level and abuse was significant (0.022) while relationship status to the abuser was insignificant. The real surprise here was relationship status as there was no significant difference between co-habiting, married or single.

Conclusion: Risk factors for domestic violence need to be identified and employed in developing a screening tool for identifying women at risk.
The Impact of Hyperventilation on the Outcome of Intensive Care Patients with Brain Injury
F Mohammed, S Hariharan, D Chen

Anaesthesia and Intensive Care Unit, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
Email: farzannamohammed@yahoo.com

ABSTRACT

Background and Objectives: Patterns of hyperventilation used in the management of patients with brain injury following admission to an intensive care unit (ICU) vary. This study evaluated the effect of hyperventilation on the outcome of these patients.

Design and Methods: A ten-year retrospective observational study was conducted on brain injury patients. Demographic data including age, sex, ethnicity and substance abuse were noted. Aetiology, Glasgow Coma Score (GCS) on admission/discharge, length of stay, duration of hyperventilation and PaCO$_2$ were recorded. Multivariate analysis, Chi squared tests and Kaplan Meier survival curves were used to analyse the effect of variables on outcome. ‘Receiver operating characteristic’ curve analyses were done to determine the discriminant ability of admission GCS and PaCO$_2$.

Results: Of the 197 patients studied, 164 (83.2%) were male. The mean age was 41.3, mean length of stay was 10.4 days and mean GCS admission score was 6.3. Hyperventilation was most often planned for 48 hours (35 %). Factors such as age, length of stay, GCS admission score, mean ICP, mean PaO$_2$ and mean PaCO$_2$ had no relationship with patient outcome. Mean PaCO$_2$ and admission GCS were not good predictors of patient outcome. Kaplan-Meier survival curves showed that patients having PaCO$_2$ > 30 mmHg had a higher survival at 30 days, but this was not statistically significant (p= 0.06).

Conclusion: There was no improvement in the outcome of brain injury patients by deliberate hyperventilation to achieve lower levels of PaCO$_2$. 
ABSTRACT

Background and Objective: The clinical utility of cranial computed tomography (CT) after head trauma has been assessed in many centres, but not in a setting such as ours. This study assessed the cranial CT scan trends and findings in cases of head trauma at the Eric Williams Medical Sciences Complex in Trinidad.

Design and Methods: A retrospective review of the radiology consultation reports of all head trauma (HT) patients from July 2008 - June 2009. Demographic data and CT findings were investigated for 121 cases.

Results: The mean age was 27.01 years and the overall male: female ratio was approximately 7:3. A normal CT scan was seen in 50% (56 cases). The most common abnormal HT findings were intra-cranial haemorrhage and fractures. Parenchymal haematomas were found in 9% of HT patients referred for cranial CT, while epidural, subarachnoid and subdural haematomas were found in 1.6, 4.1 and 3.3% of cases. Fractures were present in 17% of all cases and the majority (83 %) of all fractures involved the cranial vault. Of these fractures, half were closed, 37.5% were depressed (62.5% non-depressed), 68% linear (32% comminuted). Solitary fractures (as opposed to two or more) were observed in 57% of cases.

Conclusion: These findings emphasize the importance of cranial CT scan examinations in the management of head trauma patients, as evidence of injury was observed in roughly half of the patients in this study.
The Elderly in Trinidad: Health, Family Life and Economic Issues
JM Rawlins¹, D Simeon ², DD Ramdath¹, DD Chadee¹

¹The University of the West Indies, St. Augustine, Trinidad and Tobago.
²Caribbean Health Research Council, Trinidad and Tobago.
E-mail: Joan.Rawlins@sta.uwi.edu

ABSTRACT

Background and Objectives: As the population of Trinidad ages, there are many questions being asked about the health and social situation of older persons. This study sought to determine the general health and socio-economic status of the elderly persons surveyed and to explore some issues of family-life.

Design and Method: An island-wide survey of persons aged 65 years and older was conducted in early 2002 in Trinidad. Eight hundred and forty five (845) elderly persons were chosen using systematic random sampling. The main survey instrument for data collection was a questionnaire that included structured as well as open-ended questions. The subjects were chosen in a house-to-house survey conducted in all eight counties in Trinidad.

Results: Those selected ranged in age from 65 -102 years and represented all the ethnic groups in Trinidad. These elderly persons lived in a wide range of housing situations. The majority lived in the homes of family members (57%) and 16% lived on their own. A large proportion (80%) had at least one chronic medical problem, although 44% reported their health as “fairly good” or “good”. More than a half of the males (53%) and 67% of the females were taking at least one prescribed medicine. The main sources of income were old age pension (85%), and National Insurance (15%). Thirty-three percent reported feelings of loneliness. This figure includes 28% of those who did not live alone.

Conclusion: The data revealed that across all ethnic groups, more than one third of the sample reported themselves to be in fair to good health, however many stated that they experienced loneliness as a common feature of family-life.
Evaluating Cardiovascular Risk Factors in Asymptomatic Individuals in a Trinidadian Community
K Singh, I Ogeer, R Bacchus and K Mungrue

Department of Public Health and Primary Care, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-Mail: krissy.singh@yahoo.com

ABSTRACT

**Background and Objectives:** The severity of cardiovascular disease based on risk factors can be assessed using risk prediction models and this can play an important role in early screening and intervention in asymptomatic individuals. The objective of this study is to evaluate cardiovascular risk factors in asymptomatic individuals.

**Design and Methods:** We used a cross-sectional design and enrolled 151 participants. A questionnaire was designed and pre-tested from which data on relevant cardiovascular risk factors were collected. Qrisk a risk predictor model was also used to calculate a risk prediction scores with a score of >20 indicating an individual is at high risk of developing CVD.

**Results:** We found 6.6% of participants had a Qrisk score > 20, 15% were current smokers and 50.7% of participants consumed alcoholic beverages on a regular basis. There were strong family histories of type 2 diabetes, heart disease and hypertension which occurred in 66.2%, 31.3% and 57.6% of participants respectively. In addition a large proportion of participants consumed a western style diet only, 51.6% were not engaged in physical activity and only 48% consumed fruits on a regular basis.

**Conclusions:** In conclusion, we provide evidence that even in asymptomatic individuals there are existing risk factors for cardiovascular disease that can be identified. Thus this emphasises the need for risk analysis in asymptomatic individuals such that prevention strategies can be instituted.
B6.

Prescribing Errors: a Caribbean Perspective
M Rios¹,², T Seemungal¹,² DM Milne¹, A Ramkissoon¹, M Gordon

¹Department of Clinical Medicine, Faculty of Medical Sciences, The University of the West Indies, Port of Spain General Hospital, Trinidad and Tobago.
²Department of Pharmacy Services, Port of Spain General Hospital, Trinidad and Tobago.
Email: terence.seemungal@sta.uwi.edu

ABSTRACT

Introduction: Prescribing errors remain a significant cause of morbidity and mortality among in-patients with 98,000 deaths attributed to prescribing errors in US hospitals in 2005. Little information has so far been published from Caribbean hospitals.

Method: Prescribing errors were identified in prescriptions issued for in-patients of the Port-of-Spain General Hospital over a period of 6 days. Prescribing errors were defined as prescription errors (those made in filling out the prescription) and prescription faults (errors of the decision making process). Both prescription errors and prescription faults were recorded.

Results: A total of 635 prescriptions were analyzed with prescribing errors detected in 193 prescriptions (30.4%). In these prescriptions there were a total of 257 prescribing errors. Of the 257 errors, 108 (42%) were prescription errors and 149 (58%) were prescription faults. The most common prescription errors (%) were illegible handwriting (4.3%), omission of dose (2.2%), omission of ward stamp (2%) or hospital registration (2%). The most common prescription faults were prescribing a drug at an inappropriate frequency (16.5%) or dose (5.8%). Antimicrobial medications were found to be the most commonly involved in prescribing faults (33%) followed by proton pump inhibitors (14.9%). The highest prevalence of prescribing errors occurred within the Neonatal Intensive Care Unit and the Intensive Care Unit.

Conclusion: The prevalence of prescribing errors at Port of Spain General Hospital was about 30%. Further research is needed to quantify the adverse health consequence, if any, of these errors in the health care system.
ABSTRACT

**Background and Objective:** Left Ventricular Hypertrophy an independent predictor of cardiovascular morbidity and mortality is mainly attributed to hypertension but has been noted to occur in normotensive individuals. To determine the occurrence of Left Ventricular Hypertrophy (LVH) in normotensive individuals in a community setting in North-East Trinidad.

**Design and Methods:** Using a cross sectional design we recruited 209 participants across 4 primary health care facilities in North East Trinidad. All participants were screened for hypertension and subsequently had a 12-Lead ECG performed. Participants were identified as having LVH using the Sokolow-Lyon and Cornell criteria. Upon which a randomly selected group of 15 were chosen for confirmatory echocardiograms. The echocardiograms were analysed using American Society for Echocardiography guidelines and WHO MONICA study standards.

**Results:** Using the Sokolow-Lyon ECG criteria the proportion of LVH in normotensive individuals was 10.5% (95% CI, 10.1-10.9) and the prevalence of LVH was 20 per 100,000. The proportion using the Cornell ECG criteria was 5.26% (95% CI 4.98- 5.54) and the prevalence 10 per 100,000. The proportion of LVH using the A.S.E. echocardiography criteria was 2.9% (95% CI, 2.77-3.23) and using the W.H.O. guidelines, the proportion was 1.5% (95% CI 0.1.34-1.66).

**Conclusion:** The estimated prevalence of Left Ventricular Hypertrophy by echocardiography in normotensive Trinidadians was 6 per 100,000 which was similar to other international studies. In our setting, the Cornell criterion for detection of LVH was found to be less confounding as compared to the Sokolow–Lyon’s criteria.
ABSTRACT

Background and Objectives: The Cataract Surgical Rate (CSR) in Trinidad & Tobago is approximately 2000 per million per year. However, despite exceeding the minimum recommended by the World Health Organization, it still does not provide cataract surgical services at a rate sufficient to eliminate the backlog of patients waiting for cataract surgery. In an effort to increase the CSR, the government of Trinidad & Tobago increased the number of eye surgeries at public hospitals, and implemented several remedial projects from 2003 to the present. This study aims to determine how surgical outcomes for patients who underwent cataract surgery by a foreign visiting team, at a public hospital in Trinidad, compared to local and internationally established outcomes.

Design and Methods: Retrospective review of the case notes of all post-operative patients seen at a single public hospital was performed. Best corrected Snellen visual acuity (BCVA) and surgical complications were then used as clinical indicators of outcome.

Results: 57% patients in local audit achieved BCVA 6/12 or better compared to 50% patients in the foreign based study. The local team had an intra-operative complication rate of 7.2% as compared with 31% as for the foreign team. 100% of all patients who suffered complications in the local audit were able to achieve BCVA 6/12 or better while 20% of patients in the foreign audit achieved the same.

Conclusions: The surgical complication rate is particularly high in this small sample.
The Occurrence of Pulmonary Hypertension in Sickle Cell Patients with or without a Restrictive Ventilatory Defect

S Sharma1, M Rios1,2, J Osadebay1, I Isitor1, N Moore-Clarke1, W Charles3, SK Charles4, J Chin2, P Maharaj1, T Seemungal1,2

1Department of Clinical Medical Sciences, Faculty of Medical Sciences, The University of the West Indies, Trinidad and Tobago.
2Department of Medicine, Port of Spain General Hospital, Trinidad and Tobago.
3Department of Pathology, Port of Spain General Hospital, Trinidad and Tobago.
4National Blood Transfusion Service, Ministry of Health, Trinidad and Tobago.

Email: terence.seemungal@sta.uwi.edu

ABSTRACT

Background and Objectives: Sickle cell disease (SCD) is a chronic and debilitating disease that results in early mortality. Pulmonary hypertension (pHTN) and chronic lung disease are two of the most common causes of death among SCD patients. There is little information in West Indian patients on the relationship between chronic lung disease in SCD patients and pulmonary hypertension.

Design and Methods: A cross-sectional study design was used to investigate the prevalence of pulmonary hypertension in SCD outpatients with or without chronic lung disease as determined by spirometry. We measured FEV1, FEV1% and FVC, echocardiographs, 6-minute walk test, plasma haemoglobin (Hb) levels between sickle cell patients with and without a restrictive ventilatory defect.

Results: 84 Mean(SD) Age 35.8(13.2) years; 58.3% female; 64.3% of Afro-Trinidadian; noted HbSS, 85.7%; HbSC 7.1%; HbßThal, 6.0%, FEV1 2.18 (0.76) FEV1% 80.7(34.5); FVC 2.86 (0.82); Hb 8.15 (1.84) g/dl) patients were recruited. A total of 29 (34.5%) patients were diagnosed with a restrictive ventilatory defect. 19 patients had echocardiographs and they were more likely to have a lower FEV1, lower FVC and shorter six minute walk (p< 0.05 in all cases). 19 patients had echocardiographs, 9(32%) had pHTN. In the 19 patients those with normal vs. pHTN were as follows: Mean FEV1 2.03 vs. 1.53L; FEV1% 95.91 vs. 52.78; FVC 2.57 vs. 2.15; FVC% 101.45 vs. 60.45 (p < 0.05 in all cases).

Conclusion: SCD patients with reduced FVC should be screened for pHTN. Larger studies are required to confirm these conclusions in Caribbean patients.
ABSTRACT

Background and Objectives: There has been an increase in the number of patients in Trinidad and Tobago who are undergoing haemodialysis and to date no study has assessed their quality of life. This study was conducted to identify useful predictors of health-related quality of life (HRQoL) of these patients.

Design and Methods: A sample of 210 haemodialysis patients was selected between May 2010 and June 2010 using convenience sampling. The data collection instrument (KDQOL-SF™ 1.3) was a modified version of the Kidney Disease Quality of Life (KDQOL™) questionnaire. Demographical, physical, mental and emotional data were analyzed using both descriptive and inferential statistical methods.

Results: Of the total 127 respondents, most were male (65.4%, n = 83). Patients who were undergoing haemodialysis for less than three years had a lower quality of life for most scales. For the end-stage renal disease targeted scales, the mean scores were equally high for both groups except for work status for which the means were equally low. Logistic regression models showed that ‘Effect of kidney disease’ (p=0.035) and ‘Burden of kidney disease’ (p= 0.001) were useful predictors of mental health well-being; while ‘Gender’ (p= 0.014), ‘Effect of kidney disease’ (p=0.003) and ‘Burden of kidney disease’ (p= 0.030) were useful predictors of physical well-being for these patients.

Conclusion: Although these findings are similar to those observed in most countries who performed similar studies; steps should be taken to decrease the burden and effect of this disease and to improve the health-related quality of life.
ABSTRACT

Background and Objectives: A 25 year old asthmatic with pansinusitis presented to the chest clinic with chronic mucus hypersecretion and frequent exacerbations. Despite compliance with currently accepted best therapy she continued to have frequent exacerbations. Her symptoms completely resolved after 6 months of erythromycin 250 mg BD. We hypothesized that macrolides may have a significant exacerbation reduction effect in chronic lung disease.

Design and Methods: This is a randomised double blind placebo controlled study of erythromycin 250 mg BD in 109 chronic obstructive pulmonary disease (COPD) patients over 12 months, with primary outcome variable as the number of moderate and/or severe exacerbations (systemic steroid, antibiotic treated or hospitalised).

Results: *FEV1 1.32(0.53) l, FEV1% predicted 50(18) %, 69 (63%) males, 52 (48%) current smokers, mean (SD) age 67.2 (8.6) years, 38 (35%) of patients had 3 or more exacerbations in the year prior to recruitment with no differences between treatment groups. There were a total of 206 moderate to severe exacerbations: 125 occurred in the placebo arm. Withdrawals were 10 (placebo group) and 9 (macrolide group). Generalized linear modeling showed that the rate ratio for exacerbations in the macrolide-treated patients compared to placebo was 0.648 (95% CI: 0.489, 0.859), p = 0.003. Median (IQR) duration of exacerbations: placebo arm, 13 (6–24) days and 9 (6–14) days in the macrolide arm of the study (p = 0.036).

Conclusion: Erythromycin over one year, reduces COPD exacerbation frequency and duration.

*Abbreviations: FEV1 = force expiratory volume in 1 second.
ABSTRACT

Background and Objectives: Sickle cell disease is a common cause of morbidity and the major cause of death is the acute chest syndrome. We sought to describe the pattern of admission of patients with Sickle Cell Disease (SCD) and Acute Chest Syndrome (ACS) at the Port-of-Spain General Hospital.

Design and Methods: This was a retrospective cohort study with data obtained from seven medical wards over one year.

Results: Of 314 SCD admissions, a total of 25 patients were admitted 27 times (8.6%) for ACS in 2009. 24 ACS patients (96.0%) had Hb SS disease. A total of 3 ACS patients died (11.1%). Of the ACS admissions, 4 Hb SS patients (14.8%) required admission to the Intensive Care Unit (ICU) and one of these patients (25%) died from ACS. During the dry season, there were (n, %) ACS admissions (9, 33.3%) while there was twice that amount in the rainy season (18, 66.7%). All deaths occurred in the rainy season. The mean length of stay for an ACS patient was 6.44 days compared to 4.24 days for a patient with a painful crisis.

Conclusions: In conclusion it was found that there was a higher rate of admission for ACS in the rainy season and there were 3 deaths from ACS (11.1%) all in the rainy season. The mean length of stay for an ACS patient was 6.44 days. Sickle cell patients may require the same preventive measures as chronic lung disease patients including vaccines and avoidance measures for respiratory viral infection.
Self-management of Diabetes in Trinidad and Tobago
G Legall, S Teelucksingh, J Toney-Duncan, SM Swarath, G Thannoo, S Mohammed, A Toolsie

School of Basic Health Science, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
Email: george.legall@sta.uwi.edu

ABSTRACT

Objectives: To determine the effectiveness of self-management in the treatment of diabetes in Trinidad and Tobago.

Methods: Survey data were collected from May to July 2010, at four major diabetic clinics in Trinidad from 163 respondents in a sample of 200 diabetic patients, using face to face interviews. Data collected from 144 persons were useable. All the clinics were public clinics. Aspects of self-management that were focused on included diet, exercise, compliance regarding any prescription drugs, and social habits, that is, consumption of alcohol and smoking. Information concerning symptoms the patients will be experiencing as well as the progression of the disease was also noted. Demographic variables included age, sex, ethnicity, marital status, education level, employment status, and the living conditions. The sample selection method was a convenience method as the patients that could have been accessed easily were chosen. SPSS version 12 was used for data analysis.

Results: One hundred and forty-four useable questionnaires were obtained from the 163 which were returned. This gave a response rate of 72%. The majority (54.9%) of the respondents was between 45-64 years old and 67.4% were Indo-Trinidadian. Most (56.3%) of the respondents were female while 43.8% were male. In terms of living conditions, 132 (91.7%) lived with someone. Seventy seven (53.5%) had a high level of education and eighty one (56.3%) of the diabetic patients were unemployed. Ninety seven (68.8%) of the respondents were self-managed and forty-five (31.2%) were non-self managed. The respondents who were not self-managed had a greater chance of being at risk in terms of starch and carbohydrate consumption, than diabetics who were self managed. 62.2% of non-self managed diabetics ate too little starches on a daily basis in comparison to the 42.4% who were self-managed ($\chi^2 = 4.854, p = 0.028$). With respect to carbohydrate consumption, 71.1% of the respondents who were not self-managed ate too little carbohydrates in comparison to 51.5% of the self managed diabetics ($\chi^2 = 4.866, p = 0.027$). In terms of the other dietary practices, there was no difference between the self managed and the non-self managed groups with respect to eating too many sweets or fruits and vegetables. There was also no significant difference between the groups with respect to exercise practices or most of the diabetic goals. While most self managed diabetics (73.4%) said that they were not taking their medications daily as prescribed only (39.4%) of those self-managed wanted to take medication regularly compared to twenty six (57.8%) of those not self-managed. ($\chi^2 = 4.222, p = 0.040$).

Conclusions: Apart from starch and carbohydrate consumption, there were few significant differences between the habits of the two groups of self-managed and non-self managed diabetics. However, both groups were consuming foods below the required standard for a diabetic. Therefore there needs to be better communication between patient and physician so as to achieve and maintain a better quality of life.
ABSTRACT

Objectives: To compare the prevalence of myocardial infarction (MI) between hypertensive Type 2 diabetic patients with altered lipid profiles and in non-diabetic hypertensive patients in Trinidad and Tobago for the period 2005 – 2009. To identify useful predictors of MI among the following variables: HDL-c levels; hypertension, alcohol, smoking and family history and elevated serum uric acid (SUA).

Methods: Clinical data were obtained from the hospital records of a cohort of 672 adults who were treated for hypertension in public health clinics in Trinidad between 2005 and 2009. In addition to recording demographic variables, data were collected with respect to whether or not the patient was a Type 2 diabetic, and other relevant medical and social histories were also recorded. Both descriptive and inferential methods were used for data analysis with SPSS (Version 12) for Windows.

Results: The prevalence of MI was 25.45% in the sample. Males accounted for 52.63% while females accounted for 47.37%. The modal age group for MI was found to be between 61-70 years. Hypertensive type 2 diabetics with altered lipid profiles had greater occurrence of MI (23.93%) than non-diabetic hypertensive patients (7.67%) with p=0.000839. Useful predictors of MI included: Diabetes Mellitus, O.R.=3.741 [1.561-8.966], an altered lipid profile, O.R.=13.096 [4.940-34.578], family history of any cardiac conditions i.e. MI,IHD,CAD etc., O.R.=0.118 [0.021-0.673], history of other heart conditions, O.R.=4.930 [1.328-18.300] and age classification, O.R.=1.444 [1.153-2.095]. On further analysis, hypertension class (p=0.000003) and serum uric acid quartile (p=0.029265) were also significant predictors of MI. The following predictors were not useful: Family history of any other disease (which excluded diabetes, hypertension and cardiac conditions), O.R.=0.199 [0.062-0.633] and HDL-c, O.R.=0.864 [0.441-1.709].

Conclusions: The results suggest that there is a greater prevalence of myocardial infarction (MI) in hypertensive type 2 diabetics with altered lipid profiles than in non-diabetic hypertensive patients in Trinidad. Hypertension, smoking, family history and elevated serum uric acid (SUA) are useful predictors of MI. Therefore clinical data on these variables ought to be collected properly and monitored to reduce the risk of MI. It is very important that dyslipidemia be monitored in type 2 diabetics with hypertension. Strategies to attenuate dyslipidemia, hypertension and smoking in Trinidadian patients may reduce the burden of morbidity and possibly mortality from MI. HbA1c assays should be in greater use at Trinidadian health facilities. Additional studies into the effects of uric acid, HDL-c, and alcohol on vascular risk are required.
Dementia Survey in Older People in Trinidad and Tobago: A Preliminary Report
N Baboolal, G Davis, R Stewart, A McRae

Department of Clinical Medical Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: Nelleen.Baboolal@sta.uwi.edu

ABSTRACT

Background & Objectives: There is a lack of data on dementia in our population. This study determines the prevalence of dementia in various older individuals in Trinidad and Tobago.

Methods: One hundred and eighty eight individuals were assessed in this study sixty four from nursing homes in North Trinidad, sixty six from senior centers throughout Trinidad and Tobago and fifty eight from a local welfare office. These individuals were screened using the mini mental state examination (MMSE), the CERAD, and the EURO-D test. Individuals were classified as a possible case or probable case based on cut offs from previous validation studies done in Caribbean born people in London (The majority from Jamaica) and elderly people from Barbados.

Results: The prevalence of dementia increased with age reaching 40 percent in the age group 70-74 for individuals visiting the welfare office and up to 50 percent in individuals over age 80 attending the senior centers. Individuals with only a primary school education had a 31 percent prevalence of dementia. The results of the sample based on possible case and probable cases are shown in the Table1.

Table 1

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number</th>
<th>Number and prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Possible case</td>
</tr>
<tr>
<td>Welfare Centre</td>
<td>58</td>
<td>12 (20.7)</td>
</tr>
<tr>
<td>Senior Centres</td>
<td>66</td>
<td>11 (16.7)</td>
</tr>
<tr>
<td>Nursing Homes</td>
<td>66</td>
<td>3 (4.6)</td>
</tr>
</tbody>
</table>

Conclusion: The estimated prevalence of dementia is 34.5 percent in the welfare setting, 25.8 percent in the senior centers in Trinidad and Tobago and 90.9 percent in a sample of Nursing homes in North Trinidad.
ABSTRACT

Background and Objectives: In the 1950s and 1960s, numerous arbovirus surveillance studies were performed in Trinidad, yielding valuable insight into circulating viruses and the identifications of many novel virus species. Since then, there has been very little research performed on sylvatic mosquito viruses in Trinidad. This study aims to determine what sylvatic mosquito borne viruses are currently in circulation in Trinidad’s forests.

Design and Methods: Mosquito surveillance was carried out in three forested regions of Trinidad between July 2007 and March 2009. A total of 185,397 mosquitoes representing 46 species was collected, divided into pools of 1-50 mosquitoes according to species and gender, and then, screened for arboviruses using cytopathic effect (CPE) assays on Vero cell monolayers. Serological testing and partial nucleotide sequencing were used to identify the viral viruses. Phylogenetic analyses were also used to characterize the viruses isolated.

Results: Eighty-five viruses were isolated, including members of the Alphavirus (Mucambo virus; MUCV) and Orthobunyavirus (Caraparu, Oriboca, Bimiti and Wyeomyia viruses) genera. Species of the Culex subgenus Melanoconion accounted for 56% of the total number of mosquitoes collected and 97% of the viruses isolated, with Cx. (Mel.) portesi accounting for 92% of virus isolations. 70 viruses were isolated from Aripo, 13 from Nariva and 2 from the Heights of Aripo.

Conclusions: Our results also implicate Aedes (Ochlerotatus) hortator as a potential vector of MUCV. Phylogenetic analyses of MUCV isolates suggest population subdivision within Trinidad, consistent with the hypothesis of enzootic maintenance in localized populations.
Background and Objectives: Little is known about rates or determinants of Dengue virus (DENV) spread amongst countries. Our objectives were to reconstruct the spatio-temporal dynamics of DENV strains in the Americas and test hypothesis about factors influencing the rate and intensity of virus movement between countries.

Design and Methods: We used a Bayesian statistical phylogeography framework and newly sequenced DENV envelope genes from Caribbean countries, together with published sequences, to reconstructed the spread of the four main invading DENV subtypes in the Americas.

Results: For each there was an initial rapid increase in genetic diversity and rapid geographic dispersal after which individual lineages were more locally maintained, with gene flow primarily amongst neighbouring/nearby countries. Puerto Rico, Mexico, Trinidad and Barbados were repeatedly involved in gene flow with more distant locales. For DENV-1, -2 and -4, a “PopDistance” model that expects intensity of virus movement between countries to be inversely proportional to the distance between major population centres was a better fit than a “GeoDistance” model that considered distance between the centroids of countries, and an “equal rates” model that assumes equal rates of movement between all pairs of countries. For DENV-3, GeoDistance performed better than PopDistance. A model that considered air traffic between countries was worse than the distance models, but significantly better than the equal rates model.

Conclusions: American DENV is largely locally maintained with rates of gene flow to other countries influenced by distance between major cities. Some countries are hubs for dispersal to the rest of the region.
Comparison of Methylation Status of the Insulin Receptor Substrate 2 Genes among the Major Ethnicities of Trinidad
C Cuthbert, JE Foster, DD Ramdath

Department of Pre-Clinical Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad & Tobago.
E-mail: candace.cuthbert@gmail.com

ABSTRACT

Background and Objectives: Previous studies suggest disparity in the incidence of Type 2 diabetes mellitus (T2DM) among the major ethnicities of Trinidad, the causes of which remain unknown but may be linked to gene silencing by means such as DNA methylation. This study investigates whether methylation silencing of the insulin receptor substrate 2 gene (IRS-2) is implicated in the early development of T2DM among these ethnicities.

Design and Methods: Analyses are being performed on DNA extracts from 86 archived cord blood samples from newborns of Indo- & Afro-Trinidadian descent. The degree of IRS-2 gene silencing in samples is assessed by analysis of the degree of DNA methylation, using a gene-specific Methyl-Profiler PCR Assay (SABiosciences®). Hypermethylated DNA is used as a control against which relative IRS-2 methylation percentages for each sample are determined, along with means, standard deviations & F-statistics to assess significance.

Results: To date nine (9) of the archived blood samples have been analyzed for IRS-2 methylation status (three each of Indo, Afro- & mixed descent). The mean relative percentages of hypermethylation for the IRS-2 gene among persons of Indo-, Afro- & mixed descent were 1.273% (1.318 SD), 2.460% (1.496 SD) and 1.177% (0.870 SD) respectively. The F-statistic was 0.970 (P>0.05).

Conclusion: This preliminary data indicates that there is no significant difference in the relative hypermethylation of IRS-2 among these ethnic groups.
Wound-Healing Properties of the Oils of *Vitis Vinifera* and *Vaccinium Macrocarpon*

BS Nayak¹, DD Ramdath², JR Marshall¹, G Isitor¹, S Xue², J Shi²

¹Department of Preclinical Sciences, Faculty of Medical Sciences. The University of the West Indies, Trinidad and Tobago.
²Guelph Food Research Centre, Ontario, Canada.
E-mail: shivananda.nayak@sta.uwi.edu

**ABSTRACT**

**Background and Objectives:** *Vitis vinifera* (grape) and *Vaccinium macrocarpon* (cranberry) are well known medicinal plants. We investigated the pharmacological properties of the phytochemical constituents present in oils of cranberry and grape.

**Design and Methods:** The oil of grape and cranberry have been evaluated for their wound healing activity by using excision wound model in rats. The animals were divided into four groups of six each (n=6) in all the models. The test group animals were treated topically with the grape and cranberry oil (100 mg/kg body weight). The controls and the standard group animals were treated with petroleum jelly and mupirocin ointment respectively. The healing was assessed by the rate of wound contraction, and hydroxyproline content.

**Results:** On day 13, animals treated with cranberry oil exhibited (88.1 %) reduction in the wound area, compared to animals treated with grape-oil (84.6%), controls (74.1%) and standard group animals (78.4 %) \((P<0.001)\). Hydroxyproline content was observed to be \((21.22 \pm 0.02)\) mg/g in animals treated with cranberry; as compared to animals treated with grape-oil \((20.07 \pm 0.02)\) mg/g; control \((12.33 \pm 0.02)\) mg/g and standard \((29.16 \pm 0.02)\) mg/g, \((P<0.000)\).

**Conclusion:** The oils of *Vitis Vinifera* (grape) and *Vaccinium macrocarpon* (cranberry) have revealed significant wound-healing potential.
C. School of Medicine - Pre-Clinical Sciences

C5.

Adiponectin and their Relationship with Obesity, Inflammation, Blood Lipids and Insulin in Type 2 Diabetic and Non-Diabetic Trinidadians

BS Nayak, R Ramdeen, L George

Department of Pre-Clinical Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: shivananda.nayak@sta.uwi.edu

ABSTRACT

Background and Objectives: Chronic inflammation is thought to play a role in the pathogenesis of type 2 diabetes mellitus. We determined the relationship between plasma adiponectin levels and obesity, inflammation, blood lipids and insulin resistance in type 2 diabetics and non-diabetics in a patient population in Trinidad

Design and Methods: A cohort study of a total of 126 type 2 diabetic (42 males and 84 females) and 140 (43 male and 97 female) non-diabetic public clinic attendees were assessed. Along with clinical history and anthropometry, adiponectin, TNF-α, IL-6, CRP, lipid profile, glucose, and insulin were measured in fasting blood samples and insulin resistance (HOMA-IR) was calculated.

Results: Diabetics had higher (p<0.05) glucose, insulin, HOMA-IR, triglycerides, VLDL and systolic blood pressure than non-diabetics, but lower (p<0.05) HDL and adiponectin levels. Adiponectin levels were lower (p<0.05) in obese than in non-obese individuals regardless of diabetic status. Diabetic status (p =0.025), TNF - α (p=0.048) and BMI (p=0.027) were identified as useful predictors of adiponectin by multiple linear regression methods. In addition binary logistic regression analysis found glucose (p = 0.001) and adiponectin (p=0.047) to be useful indicators of Type 2 diabetes.

Conclusion: Adiponectin decreases with increasing adiposity and insulin resistance.
Assessment of the Efficacy of Anthocyanin Supplementation in Preventing Abnormalities of Insulin Signaling in Sucrose Fed Rats

S Singh¹, DD Ramdath²

¹Department of Pre-Clinical Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
²Guelph Food Research Centre, 93 Stone Rd. West. Guelph, Canada
Email: Shamjeet.Singh@sta.uwi.edu

ABSTRACT

Background and Objectives: Anthocyanins, commonly found in colored fruits and vegetables, are able to modulate cellular signaling pathways. We sought to explore the mechanisms by cardiac gene expression might be modulated by anthocyanins in rats fed a high sucrose diet.

Design and Methods: Male sprague-dawley rats were randomly divided into control (C), sucrose-fed (SF) and sucrose-fed / anthocyanin treated (SF-A) groups (n=12). Plasma glucose, insulin, and triglycerides were measured. Glucose tolerance, oxygen radical absorbance capacity (ORAC) and ferric reducing antioxidant power (FRAP) were assessed after 15 weeks. RNA from cardiac tissue was used to quantify gene expression for 84 genes along the insulin signaling pathway using Real Time PCR arrays. Statistical analyses utilized ANOVAs for assays and t-tests for gene expression data. A p-value of >0.05 was considered significant.

Results: SF animals had significantly lower FRAP values which were increased by anthocyanin treatment. Glucose, insulin, triglycerides, glucose tolerance and ORAC were not significantly different. SF animals showed significantly increased expressions for 5 genes including nitric oxide synthase 2 and insulin receptor substrate (IRS) 1 and decreased expression for hexokinase 2 and glucose transporters 1 and 4. Compared to SF animals, SF-A had significantly increased expression for 5 other genes including IRS 2 and MAPK 1 and decreased expression for another 7.

Conclusions: Sucrose feeding lowered the reducing capacity of plasma. Expression of 8 genes was changed in SF animals and these changes were modulated by anthocyanin treatment. These may represent some of the first cellular responses to a high energy diet.
ABSTRACT

Background & Objectives: Internationally dentists have been shown to have an important role to play in helping smokers to quit. The aim of this study was to determine whether dental patients in the West Indies would accept smoking cessation advice from their dentist.

Design & Methods: Cross sectional study conducted in the emergency clinic of the UWI, dental school. All new patients from age 16, attending the clinics, were invited to participate during a 5 month period. Demographic data, knowledge of effects of smoking on their health and the role of dentists in smoking cessation were determined using a self-administered 28–item questionnaire.

Results: One hundred patients participated in the study whose ages ranged from 16 to 81. The majority of patients (58.5 %) were female. 61.3 % of patients at least had secondary level education. 59.3 % of participants only presented for dental care when in pain. 92.8 % said they would appreciate it if their dentist were to provide smoking cessation advice. The majority of patients had good knowledge of the affects of smoking and lung cancer (93.9 %), oral cancer (63.3 %), but poor knowledge of its effects on wound healing (37.1 %). Most (85.7 %) of the patients who smoked said they would try to quit if their dentist suggested so.

Conclusion: Participants in this study held positive views towards dentists giving advice on smoking cessation. Dentists in Trinidad should inform patients who smoke about the general and oral effects of smoking and the benefits of quitting.
D. School of Dentistry

ABSTRACT

Background and Objectives: In 2008 the School of Dentistry, UWI became the first, internationally accredited site by the American Dental Association for the administration of a residency in general dentistry. This study examines the self-perceived clinical competencies and proficiencies of a group of residents, enrolled in an AEGD at an international site during the resident year 2008 – 2009.

Method: All residents enrolled completed an online survey at 1 month, at 7 months and at the end of the residency. The survey included 39 competency questions and 8 proficiency questions that were rated on a six-point scale: 1 (inadequate), 2 (adequate), 3 (good), 4 (very good), 5 (excellent) and 6 (not observed). For each question, a one-way analysis of variance was employed to compare the item means between months 1, 7 and 12 for statistical significance. Additionally, post-hoc tests (Tukey HSD), at a p-level of 0.05 for statistical significance, were employed to analyze at what time period differences in perceived competency and proficiency occurred.

Results: Statistically significant differences were obtained for the resident acting as the patient’s comprehensive oral provider, history taking, diagnostic abilities, treatment planning, risk assessment, record keeping, medical and dental referral, working with applied personnel, management of pathologic occlusion, restoration of root treated teeth and endodontic management of anterior teeth.

Conclusion: In terms of self-perceived competency and proficiency, it appears that the residents benefited from completing the AEGD.
ABSTRACT

Background & Objectives: Evidence suggests that emergency dental visits can be a major determinant of consumer satisfaction with dental services. This study aimed to evaluate levels of parental satisfaction with emergency dental services at the Child Dental Unit at U.W.I.

Design & Methods: Cross sectional questionnaire-based survey of 115 parents/guardians of children attending the emergency department of the Child Dental Health Clinic at U.W.I. Information on demographic variables were collected in a self-administered modified version of the Dental Visit Satisfaction Scale questionnaire. Overall level of satisfaction with the visit was measured on a response scale ranging from very satisfied to not satisfied. The parents’ opinions regarding specific aspects of the visit such as waiting times and explanation of their child’s oral health problem were also assessed.

Results: Most (82%) of the respondents in this survey were female. 48.8% were between the ages 31-40. 52% participants had received at least secondary school education. 90% of parents/guardians were very satisfied with the treatment their child received. Parents were most satisfied with the explanation of their child’s problem, the perceived level of thoroughness and competency of the dentist attending to their child as well as the time spent in the waiting room. However 21% of the parents either did not believe or had no opinion regarding the dentist’s appreciation of their child’s fear of pain.

Conclusion: Levels of satisfaction with this service were high and seem to be related primarily to the quality of dentist-patient interaction.
The Evaluation of Video-Clips as a Teaching Aide
WAJ Smith, RN Rafeek, S Marchan, A Paryag

Restorative Dentistry, School of Dentistry, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
Email: William.Smith@sta.uwi.edu

ABSTRACT

Background & Objectives: The primary method of teaching students tooth preparations in a pre-clinical operative dentistry laboratory course was live demonstrations. In 2007, video-clips of tooth preparations recorded with a digital head-mounted camera replaced live demonstrations midway in the course. DVDs of the video-clips were made available to the students for home use. The study assessed whether the use of video-clips improved student learning.

Design & Methods: A questionnaire was administered to all students (n=30) who completed the course asking their opinions on the video-clips. The grades of student practical examinations before the introduction of the camera (PE1) were compared to the grades after the video-clips were available (PE2) (ANOVA, p<0.05).

Results: An 80% response rate was obtained. Most students (85%) preferred the video-clips to the live demonstrations and 80% reviewed the DVDs at home. They expressed a preference for the videos to be made available online or as podcasts. The majority of students (60%) felt that one-on-one supervision was more effective developing their competence in tooth preparations compared to their viewing the video-clips (30%). There was no statistically significant difference between the PE1 and PE2 scores.

Conclusion: In this group of students, video-clips were the preferred method of demonstrating tooth preparations. However, student learning seemed to be facilitated more by one on one supervision. The students preferred to have the video-clips available to them online instead of on a DVD. The introduction of this teaching aide did not make a difference in practical examination grades.
E1.

Emulsifying Properties of Blighia Sapida L. (Ackee) Oil
AS Adebayo, N Anderson-Foster, N Justiz-Smith

School of Pharmacy, Faculty of Medical Sciences, University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: Sarafadeen.Adebayo@sta.uwi.edu

ABSTRACT

Objectives: To investigate the emulsifying properties of the oil (SPAO1) extracted from Blighia sapid, L (ackee), select the most stable emulsion, attempt drug loading and evaluate emulsion stability.

Design and Methods: Emulsions of SPAO1 were prepared by the classical dry and wet gum (acacia) methods, the finely divided solid (bentonite), Span 80®, and mixed-emulsifier technique incorporating Tween® 20/Span 80®, Tween® 60/Span 80®, Tween® 80/Span 80®. Emulsions were assessed by their microscopic and macroscopic characteristics. The most stable formulations were challenged with electrolytes, centrifugal force and elevated temperatures.

Results: Acacia by wet gum method produced an oil-in-water (o/w) emulsion that creamed to about 5 mL within 15 minutes at room temperature (27°C). Emulsions produced with Span® 80 lone emulgent were also unstable and cracked in about 4.3 (± 0.9) minutes. Emulsifier blends comprising Tween® 20/Span® 80, Tween® 60/Span® 80 and Tween® 80/Span® 80 in the HLB range of 4.5 to 6.5 produced stable emulsions. Emulsifier blend at HLB 6 produced the most stable emulsion. This emulsion, however, demonstrated poor loading of the model drug substance (clarithromycin). Incorporation of viscosity imparting agent significantly improved the emulsion stability.

Conclusion: A coarse, non-homogenized, stable emulsion of SPAO1 incorporating up to 1.5 % w/v clarithromycin with 0.25 % NaCMC was stable for more than two weeks. The organoleptic properties of the emulsions were also quite satisfactory.
Botanical Source-Dependent Physical and Mechanical Properties of Starch as Potential Monitor of Pharmaceutical Product Quality

AS Adebayo, CK Riley, OA Itiola

School of Pharmacy, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: Sarafadeen.Adebayo@sta.uwi.edu

ABSTRACT

Background and Objectives: This study was designed to investigate the botanic source-dependent granular structure and physical-mechanical properties of starches that may be used for functional comparison and quality assurance monitoring.

Design and Methods: Starch powder mounted in Smith’s starch reagent was examined under optical microscope and birefringence was done on a Leica DMRE polarized light microscope. Micrographs of samples coated with gold were captured at X 3.26×10^2 on a Philips Scanning Electron Microscope Model # 505. X-ray spectra were recorded at 20 angles from 4º - 38º on a Drucker D5005 X-ray diffractometer. Differential Scanning Calorimetry (DSC) was done on starch/water mixture (1:2 w/w) in aluminum DSC pans. Thermograms were acquired between 20ºC and 100 ºC at a heating rate of 10 ºC min^-1 in a Perkin-Elmer DSC7.

Results: Microscopy, birefringence & SEM show botanic source-dependent difference in granular structure of starch samples. Various shapes from predominantly angular polyhedral (corn), through ellipsoidal (yam), to sub-spherical granules (breadfruit) were observed. Generally, X-ray diffraction patterns of some starch from same genera can be superimposed, majority of starch differ in pattern across genera. Some starch showed only endothermic peaks while others show exothermic and endothermic peaks.

Conclusions: The botanical source-dependent differences in physical-mechanical properties of starch powders may provide useful parameters for monitoring quality of starch and starch-derived excipients and of products in which they are present. This may be used in solid dosage form analysis to detect adulteration, faking and counterfeiting and in Process Analytical Technology of solid dosage forms.
Continuing Education Needs of the Caribbean Association of Pharmacists
RM Extavour¹, DS Pellow², B Scantlebury²

¹School of Pharmacy, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
²The Caribbean Association of Pharmacists, Kingston, Jamaica
Email: rextavour@yahoo.com

ABSTRACT

Objectives: The aim of this study was to identify the perceived continuing education needs of members of the Caribbean Association of Pharmacists, current challenges faced in practice and preferred modes of delivery of continuing education.

Design and Method: 1000 member pharmacists living in Caribbean states were emailed a structured instrument via an online survey administrator. A link to the survey was also posted on the Association’s website for three months. Reminders were sent one month and three months after the survey was launched.

Results: 178 members throughout the region completed the survey: 78.9% were female and the mean age = 41.7 years. On a scale of 1-4 implementing enhanced patient care services (2.52), drug therapy review (2.51) and updates in therapeutics (2.51) received highest interest. 21.3% were interested in continuing education in infectious diseases, 20.2% reproductive/genitourinary health, 18.5% cancer, 18.5% diabetes mellitus and 18.5% cancer.

Online articles/lectures were preferred by 50.0% of respondents, live workshops by 30.3%, face-to-face lectures by 29.8% and journal articles by 28.1%. 50.6% identified challenges to practice: 11.2% indicated patient education/counseling, 7.9% misuse and/or abuse of medicines/substances, 7.3% drug shortages / budget constraints and 6.2% absence or breach of policies/regulations/laws.

Conclusion: The needs assessment survey captured a range of topics of interest and preferences for delivery of continuing education for pharmacists working in the Caribbean. These findings will guide the education committee of the Caribbean Association of Pharmacists in planning future continuing education programs.
Surveillance of Antibiotic Resistance at Tertiary Institutions in Trinidad

PI Sealy, D Ignacio, M Manjunath, W Swanston

School of Pharmacy, Faculty of Medical Sciences, The University of The West Indies, St. Augustine, Trinidad and Tobago.
E-mail: patricia.sealy2@sta.uwi.edu

ABSTRACT

Background and Objectives: Surveillance studies conducted by the Centres for Disease Control have demonstrated an alarming increase in resistance rates, which impacted negatively on patient mortality/morbidity and limited the use of antimicrobial agents. We proposed to report the susceptibility data from the Eric Williams Medical Sciences Complex (EWMSC), Port of Spain General Hospital (PSGH) and Sangre Grande District Hospital (SGDH) for the year 2008 in order to monitor the selection and spread of resistant organisms.

Design and Methods: Retrospective laboratory-based susceptibility data from clinical isolates (blood, respiratory, urine cultures) were reviewed for the year 2008 from the named tertiary institutions. Microbiology data included antimicrobial susceptibility (percentages) of all clinical isolates processed based on broth microdilution at PSGH or MicroScan identification/antimicrobial susceptibility system at EWMSC and SGDH.

Results: High resistance (31 to 62%) to aztreonam, ceftazidime/cefepine, ciprofloxacin, gentamycin and piperacillin/tazobactam in Pseudomonas aeruginosa was observed in blood isolates from the ICU at EWMSC; similar rates were seen for this organism in all isolates from all wards at EWMSC. Respiratory isolates of Acinetobacter spp. were exceedingly (57 to 86%) resistant to piperacillin/tazobactam, ceftazidime/cefepine, gentamycin, ciprofloxacin and carbapenems in the ICU at PSGH. Urinary isolates of Pseudomonas aeruginosa showed resistance rates from 21 to 47% for aztreonam, piperacillin/tazobactam, ceftazidime, tobramycin, fluoroquinolones and imipenem at SGDH.

Conclusion: Clinicians should rigorously monitor resistance rates and correlate observed trends with consumption of antimicrobial agents at each institution. Appropriate recommendations (prescriber education and antibiotic cycling) can therefore, be made to promote the use of more efficacious agents.
The In Vitro Efficacy of Antifungal Impregnated Biodegradable Bone Delivery Systems
PI Sealy¹, S Chapman², JD Cleary²

¹School of Pharmacy, Faculty of Medical Sciences, The University of West Indies, St. Augustine, Trinidad and Tobago.
²University of Mississippi Medical Center, Jackson, MS, U.S.A.
E-mail: patricia.sealy2@sta.uwi.edu

ABSTRACT

Background and Objectives: Fungal osteomyelitis is a rare lifethreatening infection. We examined the release of amphotericin-B (AMB), fluconazole (FCZ) and micafungin (MFG) from beta-tricalcium phosphate (TCP) bone delivery systems (BDSs) as an option to parenteral therapy.

Design and Methods: Beta-TCP microcrystals (0.5 g) were mixed with AMB (10 mg), FCZ (38 mg) and MFG (20 mg) powders into a solid matrix and then soaked in 10-mL phosphate buffered saline (PBS), then 2-mL of each elutant was replaced with 2-mL PBS on specific days. Bioassays were also performed with the elutants to determine zones of inhibition; 10-µL of the elutants was placed in wells cut into the yeast nitrogen base (YNB) agar (25-ml) inoculated with 0.5-mL C. albicans (4 x 10⁶ cells/mL). Finally, 24-well tissue culture plates seeded with osteoblast cells in 1-mL of minimum essential medium (MEM) Eagle were selectively exposed to 1-mL of C. albicans (1.6 x 10⁵ cells/mL) for 2 hours at 37°C, then washed and replaced with MEM. The matrices were instantly placed in wells of a 72-hour plate. Cells were counted/stained at the end of each period (24-48-72 hr). A loop of media from wells of the 72-hour plate was streaked onto YNB agar and checked for yeast colonies.

Results: The zone diameters exceeded the minimum inhibitory concentration for C. albicans over 6 weeks. Elutants from the matrices produced complete (AMB, MFG) or partial (FCZ) C. albicans clearance with minimum injury to osteoblast cells.

Conclusions: Antifungal BDSs may be used as options for treating fungal osteomyelitis.
Attenuation of MBL Ligand Associated Fungal Infection Mortality

PI Sealy¹, JD Cleary², E Swiatlo²

¹School of Pharmacy, Faculty of Medical Sciences, The University of The West Indies, St. Augustine, Trinidad and Tobago
²University of Mississippi Medical Center, Jackson, MS, U.S.A.
E-mail: patricia.sealy2@sta.uwi.edu

ABSTRACT

Background and Objectives: Mannose Binding Lectin (MBL) activates the classical complement pathway after binding mannose on microorganism surfaces, eliciting immune clearance. MBL binding to teicoplanin, dabavancin (DAB), or mannose sugars (MAN) increases fungal infection mortality. Our purpose was to assess if DAB associated mortality could be attenuated with administration of MBL.

Design and Methods: An invasive candidemia model was used to evaluate differences in survival between MAN and DAB treated groups compared to a negative control group (normal saline). Eight (8) groups of 10-12 week old mice received an initial pharmaceutical dose [DAB 40 or 80 mg/kg, MAN 2.88 mg/kg - IV], saline or amphotericin B 2 hr pre-infection. Balb/c mice were then injected (IV) with a lethal dose of Candida albicans (1.4 x 10⁶ cfu). Select DAB 40 mg/kg treatment groups were administered MBL 0.05 – 1 µg/kg, 2 hr post infection.

Results: In vivo cumulative survival at 48 hours revealed 10, 30, 30 and 90% survival rates for mice administered MAN, DAB 40 or 80 mg/kg, and saline respectively. The remaining mice exposed to DAB and mannose failed to survive beyond 60 hours post-infection, while 60% of saline exposed mice survived. MBL 0.05 or 0.5 µg/kg co-administered with DAB 40 mg/kg did not experience an increased survival. However, survival data analyzed using Log Rank statistics revealed a significant increase in mouse survival with MBL 1µg/kg therapy in DAB 40 mg/kg (p<0.05).

Conclusions: Therapy with MBL may attenuate the mortality associated with this drug interaction in a dose dependent fashion.
Occurrence of Resistance to Methicillin and other Antimicrobial Agents amongst S. Aureus Strains Isolated from Pigs and their Human Handlers in Trinidad

AC Gordon¹, JR Marshall¹, K Ramdass¹, A Stewart-Johnson¹, K Verstappen², J Wagenaar², AA Adesiyun¹

¹School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
²Faculty of Veterinary Medicine, Utrecht University, The Netherlands.
Email: aadesiyun@gmail.com

ABSTRACT

Background and Objectives: Methicillin-resistant Staphylococcus aureus (MRSA) has emerged recently worldwide in production animals, and particularly pigs and veal calves which act as reservoirs for MRSA strains and therefore a source of human acquisition. The study determined the prevalence of MRSA and other resistant strains of S. aureus from the anterior nares of pigs and human handlers on pig farms in Trinidad.

Design and Methods: Isolation of S. aureus was done by concurrently inoculating Baird-Parker agar (BPA) and Chromagar MRSA (CHROM) with swab samples and isolates were identified using standard methods. Suspect MRSA isolates from Chromagar and BPA were subjected to confirmatory test using Oxoid PBP2 latex agglutination test. The disc diffusion method was used to determine resistance to antimicrobial agents.

Results: The prevalence of MRSA was 2.1% (15 of 723) in pigs but 0.0% (0 of 72) in humans. For isolates of S. aureus from pigs the frequency of resistance was high to penicillin (92.2 %), ampicillin (89.1 %), tetracycline (68.8 %), streptomycin (67.2 %) and oxacillin (59.4 %) but low to sulphamethoxazole/trimethoprim (SXT) (10.9%) and norfloxacin (23.4 %). For human S. aureus isolates, resistance was high to ampicillin (86.4%), streptomycin (86.4%), penicillin (77.3%) and oxacillin (45.5%) but low to SXT (4.6%) and norfloxacin (9.1%).

Conclusion: The detection of MRSA strains in pigs, albeit at a low frequency, coupled with a high prevalence of resistance to commonly used antimicrobial agents on pig and humans could have zoonotic and therapeutic implications.
ABSTRACT

In Trinidad, small ruminant farms are semi-intensively managed where the animals become infected with helminth parasites since the climatic conditions are favourable for the development and survival of infective stages of the helminths. During the last 30 years, farmers have been using different anthelmintics to control intestinal parasites of animals. Hence, an attempt was made to study the efficacy of commonly used drugs on gastro-intestinal nematodes of sheep.

Out of a total of 350 sheep in a small ruminant farm at Carlsen Field, 50 animals aged 6 to 15 months confirmed to have helminths infection were selected. They were divided into 5 groups, each consisting 10 animals. The Group TA animals were treated with albendazole, group TF with fenbendazole, group TI animals with ivermectin, group TL with levamisol, and group NTC animals were not given any drug and served as control. The animals in groups TA, TF, TL were treated once orally with recommended doses of albendazole, fenbendazole and levamisol, respectively while group TI animals were given a single dose of ivermectin parenterally. The number of eggs per gram of faeces from each animal was determined before treatment and once weekly for 4 weeks after treatment. The body weight of animals and ‘Famacha score’ were also recorded before administration of drugs and at the end of the experiment.

The anthelmintic resistance to different drugs was detected by FECRT (In vivo) with EPG recorded on 14 day post-treatment. The data analysis using the computer program, RESO revealed that resistance existed to albendazole (33%), fenbendazole (47%) and levamisol (18%) whereas resistance to ivermectin was low (4%).
A Health Survey of Captive *Geochelone Carbonaria* in Trinidad

G Indar, C Jerry, R Rampersad, M Reed

School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.

**ABSTRACT**

The study was performed to monitor the progress of *Geochelone carbonaria*, which is protected under law and can possibly become endangered; they are also rapidly becoming household pets. The investigation focused on collecting straight carapace lengths and body weights, collection of urine for urinalysis, collection of faecal samples for faecal flotation and direct faecal smears and observation for abnormalities for each respective tortoise. The objectives of the study was to derive a body condition scoring system for the tortoises, perform a parasitological analysis, urine analysis, to create a shell softness compression guide, to evaluate ‘doming’ to perform a general health survey of the species and to perform statistical analyses on the body condition score.

Each tortoise was assigned an identification number and a questionnaire was filled out for each tortoise that included investigations of diet, husbandry and history of illness.

Results revealed that all the tortoises had endoparasites. A body condition index (BCI) system was derived and was proved to not be influenced by diet, gender, collection site or the presence of abnormalities.

*Geochelone carbonaria* were in general good health, however, management problems were encountered and owners were advised on how to make improvements.
A Comparison of a Quantitative Real Time PCR and Reverse Line Blot Hybridization in Detecting “Candidatus Mycoplasma haemominutum”, Mycoplasma haemofelis and “Candidatus Mycoplasma turcencis” Infections of Domestic Cats in Trinidad and Tobago

K Georges¹, CD Ezeokoli², OAE Sparagano³, N Seepersad¹, AM Pottinger¹, T Auguste¹, S Tasker³

¹School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
²University of Agriculture, College of Veterinary Medicine, Makurdi, Nigeria.
³Northumbria University Newcastle upon Tyne, Newcastle, U.K.
⁴Langford Veterinary Diagnostics, University of Bristol, Bristol, U.K.
Email: karla.georges@sta.uwi.edu

ABSTRACT

Background and Objectives: Feline haemoplasmas, Mycoplasma haemofelis (Mhf), ‘Candidatus Mycoplasma haemominutum’ (CMhm) and ‘Candidatus Mycoplasma turcencis’ (CMt) are at present not able to be cultured, hence molecular methods are used for diagnosis and species identification and differentiation of these organisms. The purpose of this study was to compare a Reverse Line Blot Hybridization assay (RLB) for simultaneous detection Mhf, CMhm and CMt performed at the School of Veterinary Medicine, Trinidad with 3 separate quantitative real time polymerase chain reaction (qPCR) assays used for diagnosis of these three feline haemoplasmas at Langford Veterinary Diagnostics, University of Bristol, UK.

Design and Methods: The RLB and qPCR assays were applied to 152 DNA samples extracted from blood of cats from Trinidad and Tobago. Samples were selected from cats brought into the SVM small animal clinic, Trinidad and Tobago Society of Prevention of Cruelty to Animals (TTSPCA) and from a private veterinary clinic.

Results: CMhm and Mhf were detected using both assays. CMt, DNA was also detected by the qPCR but was not detected using the RLB. Comparing the RLB and qPCR assay for the detection of CMhm DNA, 40(26.3%) and 48(31.6%) cats, respectively were positive, indicating strong agreement (kappa = 0.87). The difference was more marked for Mhf, with RLB detecting only 11(7.2%) positive cats whereas the qPCR detected 41(27.0%) positive, indicating moderate agreement (kappa = 0.35).

Conclusion: Although the qPCR was more sensitive than the RLB, the RLB compares favourably with the qPCR assay in detecting and differentiating CMhm and Mhf DNA.
F. School of Veterinary Medicine

Histoplasmosis in a Domestic Shorthaired Cat in Trinidad

K Muñoz, NFA Mootoo, I Pargass

School Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: Kirk.Munoz@sta.uwi.edu

ABSTRACT

Background and Objectives: A 14 year-old neutered male domestic short-haired cat, weighing 2.9 kg, presented to the veterinary hospital with a 5 month history of naso-ocular discharge, dyspnoea, lethargy and inappetance. The cat was previously treated intermittently over a period of 5 months with amoxicillin-clavulonic acid, cephalexin, lysine and prednisolone with no improvement and also tested negative for Feline Leukemia virus and Feline Immunodeficiency virus during this period. Radiographs were taken of the nasal chambers and thorax as well as a rhinoscopic examination of the rostral nasal conchae. Biopsy samples were taken from the nasal sinuses for cytological and histological evaluation.

Findings: There was stenosis of the left nares with reduced definition of the nasal turbinates bilaterally in the area of the rostral maxilloturbinate. There was no radiographic evidence of osteolysis of the nasal septum, maxillary or frontal bones. Rhinoscopy could only be performed on the rostral nasal chamber of the right side which revealed a thickened, dull appearance of the turbinates. On cytological examination, many yeast-like organisms, approximately one-quarter the size of a red blood cell, were observed extracellularly and within macrophages. The cytoplasm was basophilic, and contained a purple, eccentrically located nucleus. A pyogranulomatous inflammatory response was also noted. Histologically, there was a severe granulomatous rhinitis with intralesional yeast organisms measuring 2-4 \( \mu \text{m} \) in diameter.

Conclusion: The morphological characteristics of the organisms seen both cytologically and histologically were consistent with Histoplasma capsulatum. Itraconazole was started at a dose rate of 10 mg/kg PO every 12 – 24 hours for 4-6 months, with monthly follow-ups.
A Non-invasive Evaluation of the Agouti (*Dasyprocta leporina*) Abdomen with Diagnostic Ultrasound

LM Koma¹, NFA Mootoo¹, C Legal¹, AO Adogwa ², M Singh³

¹Department of Clinical Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
²Department of Basic Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
³Department of Food Production, Faculty of Science and Agriculture, The University of the West Indies, St. Augustine, Trinidad and Tobago.

E-mail: Lee.Koma@sta.uwi.edu

**ABSTRACT**

**Background and Objectives:** Anatomical studies of the abdominal viscera of the agouti (*Dasyprocta leporina*) have been reported. Such studies necessitated killing the animals. There is no report of abdominal evaluation in live agouti. This study applied diagnostic ultrasound for a non-invasive examination of the abdomen in live agoutis.

**Design and Methods:** The study was conducted on agoutis raised in captivity at the University Field Station, The University of the West Indies, St. Augustine, Trinidad and Tobago. Non-breeding adult male and female agoutis were included. Abdominal ultrasonography was conducted on animals placed under general anaesthesia. Veterinary-dedicated ultrasound equipment was used with a micro-convex and a linear transducer. The ultrasound techniques used were noted together with their limitations, and the agouti abdominal structures were characterized.

**Results:** Twelve agoutis (7 females, 5 males) were examined. Ultrasonographic windows were identified at: the xiphoid and pelvic regions; along the costal arches; and the right and left paramedian areas of the ventral abdomen. The liver, stomach, spleen, kidneys, urinary bladder, large intestines and testes, in males, were consistently visualised with excellent detail of their internal architectures. Other abdominal structures were seen less consistently or not at all due to obstruction from gas within the large intestines.

**Conclusion:** Ultrasonography is a useful technique for non-invasive evaluation of the agouti abdomen. It complements abdominal radiography, and may be useful for reproduction and health management of the agouti.
F7.

The Effects of Different Stabling Methods on the Lower Airways of Thoroughbred Horses in Trinidad

MES Branday, Z Bakos

School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.

Email: mebranday@gmail.com

ABSTRACT

Background and Objectives: Respiratory disease is a major cause of poor performance in Thoroughbred (TB) race horses and can be influenced by environmental conditions. The objectives of this study were to observe the effects of housing environment on the lower respiratory tract, to observe differences in the lower airways possibly attributable to the type of housing, and to investigate the incidence of Inflammatory Airway Disease (IAD) in TB horses in Trinidad.

Design and Methods: The TB population in Trinidad is approximately 1300. In this study, n = 42 (19 stallions 4 geldings, 19 mares). The mean age of was 5.3 years, median age 3 years, and range 1-17 years. Horses housed in air-conditioned (g1) and un-air-conditioned (g2) stables, and outdoors (g3) were evaluated based on clinical history, physical examination (PE), complete blood count (CBC), respiratory endoscopy, and bronchoalveolar lavage (BAL) and cytology. Values were compared to identify correlations between stabling methods and increased evidence of lung pathology.

Results: Based on PE and CBC results, all horses were clinically normal. Neutrophil percentages obtained for g2 was high and eosinophil percentages were high in both g1 and g2. The neutrophil percentage was the only value with statistical significance. g1 had the highest incidence of lymphoid hyperplasia and laryngeal hemiplegia. g3 had highest percentage of tracheal mucus.

Conclusions: g2 had the highest median value for percentage neutrophils in BAL fluid, followed by g1 then g3. Both g1 and g2 had higher median values than g3. The hypothesis that g1 would have more evidence of lung pathology than g2 was rejected. Results suggest the prevalence of IAD in the majority of g1 and g2 horses.
ABSTRACT

**Background and Objectives:** A ten year old male intact domestic short-haired (DSH) cat presented with anorexia of one week duration, lethargy, weight loss and mild icterus. The cat lived his entire life in Trinidad with no known exposure to any imported cats. The cat was de-wormed with ivermectin at a dose rate of 0.4 mg/kg subcutaneously, placed on supportive treatment as well as amoxicillin-clavulonic acid and force-fed with no improvement and subsequently died 4 days later.

**Findings:** A complete blood count was unremarkable whilst serum biochemistry and abdominal ultrasound were suggestive of chronic cholangiohepatitis. Severe fluke infection was found on necropsy in the gall bladder and bile ducts. Platynosomum fastosum was identified as the fluke involved and was believed to be the cause of the cholangiohepatitis and the icterus.

**Conclusion:** This finding of *P. fastosum* in a DSH cat was unexpected, since to the authors’ knowledge this is the first report of *P. fastosum* in Trinidad. However it has been previously reported in the Bahamas.
An Evaluation of the Thoracic and Abdominal Radiographic Anatomy of the Agouti, 
Dasyprocta Leporina in Trinidad
NFA Mootoo1, LM Koma1, C Legall1, AO Adogwa2, M Singh3

1 Department of Clinical Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
2 Department of Basic Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
3 Department of Food Production, Faculty of Science and Agriculture, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: Natasha.Mootoo@sta.uwi.edu

ABSTRACT

Background and Objectives: In Trinidad and Tobago, the agouti is actively hunted as a source of exotic meat. An attempt to intensify production by many enthusiasts has been observed. Twelve (7 females, 5 males) Dasyprocta leporina were obtained from the captive herd at the University Field Station (UFS). There is no published radiological data for this species therefore an investigation into the radiological anatomy was conducted.

Design and Method: Twelve agouti were obtained and anaesthesized and orthogonal views including right and left lateral views and dorsoventral and ventrodorsal views of the thorax and abdomen were taken. Standard measurements of anatomical landmarks of the thorax and abdomen were performed using established radiological normal ranges for dogs and cats for comparative purposes.

Results: The thoracic cavity of D. leporina was amenable to radiological evaluation. Measurements for the limits of the thoracic cavity, tracheal size, pulmonary vascular measurements and location and the great vessels were identified. The Vertebral Heart Score measurement and the clock face analogy were used to quantify the cardiac size and location of the great vessels. The 12 animals studied closely fitted into the normal ranges of the domestic cat than dog.

The differentiation between the abdominal organs was difficult. The stomach could be identified on orthogonal views. The small intestinal diameter, sacculations of the caecum and the location of the terminal colon were seen. Kidneys were seen in the retroperitoneal space and the caudoventral border of the liver and bladder on the lateral views.

Conclusion: The thoracic cavity of Dasyprocta leporina lends itself to repeatable radiographic interpretation of the respiratory and cardiovascular systems while the abdominal cavity is less amenable due in part to the presence of gas within the intestines and the lack of sufficient intra-abdominal fat.
ABSTRACT

This study was conducted to establish haematological and serum chemistry reference intervals for goats reared in Trinidad and Tobago. A total of 128 animals (68 adults and 60 juveniles) from five farms were sampled. Animals that were being treated for any condition or those that appeared unhealthy on physical examination were excluded from the study. In addition, faecal samples were collected and examined to exclude animals that had a significant internal parasite load. A preliminary analysis was performed on the data gathered to determine the effects of age and gender on the values of blood parameters. Unlike gender, age was found to have an effect on the values of most of the blood parameters ($P < 0.05$) and as a result two categories of reference intervals were constructed – one for adults and one for juveniles. Reference intervals for blood parameters were defined by the mean values plus or minus two standard deviations for variables that were normally distributed and by the interval between the 2.5th and the 97.5th percentiles for data that were not normally distributed. It is being recommended that reference intervals constructed on the completion of the project, be used to aid local clinicians in the interpretation of their laboratory data.

Keywords: Goats; Haematology; Serum chemistry; Reference intervals; Trinidad and Tobago
Prevalence and Characteristics of Enteric Pathogens in Diarrhoeic and Non-Diarrhoeic Foals in Trinidad

R Harris, K Sankar, J Small, R Suepaul, A Stewart-Johnson, AA Adesiyun

School of Veterinary Medicine, Faculty of Medical Sciences, University of the West Indies, St. Augustine, Trinidad and Tobago.
Email: kerren2102@gmail.com

ABSTRACT

Background and Objectives: During the foaling season, mortalities have been reported to be due to enteric pathogens with associated economic losses. As there is a dearth of information on the prevalence of enteric pathogens in foals in Trinidad, this study aimed to determine the frequency of pathogens in faecal samples of foals.

Design and Methods: A cross sectional study was conducted with 164 samples being collected from 16 farms in Trinidad. Standard procedures were used to isolate or detect Salmonella spp., E. coli, E. coli O157, Strongyloides westeri and Cryptosporidium parvum.

Results: Of 164 faecal samples collected from foals (9 diarrhoeic and 155 non-diarrhoeic) the prevalence of Salmonella spp., E. coli, E. coli O157, S. westeri and C. parvum was 5%, 83%, 0%, 35% and 73% respectively. Salmonella spp. was 6.25 times more prevalent in diarrhoeic than non-diarrhoeic foals while E. coli was 1.1 times and C. parvum 1.5 times more prevalent in non-diarrhoeic than diarrhoeic foals.

Amongst isolates of Salmonella spp. from diarrhoeic foals, resistance was high to metronidazole (100%), tetracycline (50%) and chloramphenicol (50%) while from non-diarrhoeic foals the prevalent resistance was to metronidazole (100%) and ampicillin (33%). For E. coli isolates from diarrhoeic foals resistance was high to metronidazole and ampicillin (100% each), tetracycline (86%), streptomycin and sulphamethoxazole/trimethoprim (78% each) while the corresponding values in non-diarrhoeic foals were comparatively lower at 100%, 88%, 37%, 42% and 30% respectively.

Conclusion: The high prevalence of E. coli, S. westeri and Cryptosporidium parvum in diarrhoeic and non-diarrhoeic foals coupled with the high prevalence of resistance to antimicrobial agents amongst Salmonella spp. may have etiologic and therapeutic significance in foals in Trinidad.
A Comparative Study of the Blood Supply to the Brain of the Agouti and the Rabbit
S Robertson, A Bodilenyane, T Tshukudu, AO Adogwa

School of Veterinary Medicine, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago.
E-mail: sueann.robertson@ymail.com

ABSTRACT

Background and Objectives: The blood supply to the brain varies among different animal species to which limited study has been done, especially on wildlife animals. This study compared the general features on the brain of the agouti and that of the rabbit and compared the blood supply and venous drainage of the agouti and the rabbit.

Design and Methods: Five adult agoutis (Dasyprocta spp.) (2.7–3.2 kg) and four rabbits (Oryctolagus spp.) (1.7–2.6 kg) were used in the study. Animals were deeply anesthetized with an intramuscular injection of a mixture of ketamine hydrochloride and sodium thiopentol. The thoracic muscles and the diaphragm were incised to reveal the heart. 18-gauge catheters were placed in one of the ventricles and the animals were then embalmed using formalin solution. Blue latex was infused into the right ventricles, outlining venous supply and red latex in the left ventricles for the arterial. The specimens were subsequently immersed in formaldehyde for a week to allow latex polymerization and tissue fixation.

Results: Generally the cerebrum of the agouti is longer and bigger than the cerebrum of the rabbit. The sulci were also more defined. In the agouti only one branch of the aortic arch exists, the brachiocephalic trunk while in the rabbit there are two branches, the brachiocephalic trunk and the left subclavian branch.

Conclusion: The findings of these anatomical differences can assist in future wildlife studies on the agouti. This information should be useful for subsequent morphological studies on the vascularization of the central nervous system.
ABSTRACT

Background and Objectives: Two mixed breed, intact bitches presented to the Veterinary Teaching Hospital with soft tissue masses protruding from their vulvas. One, an eleven month-old, periparturient bitch had been in pro-oestrus two months previously and was mated. Two days before presenting to the clinic, the bitch’s vulva was swollen and the ventral vaginal wall was protruding from the vulva. The following day, there was a decrease in the size of the bitch’s abdomen and an Y-shaped mass was observed protruding from the vulva. On presentation, the bitch was dull, lethargic and 7% dehydrated. The other, a four-year old bitch had whelped two years prior without any complications, had not been observed in heat since and was normal on physical examination. Both bitches had decreased appetite, were able to urinate and had secondary myiasis of the prolapsed uteri.

Design and Methods: Complete blood count and serum chemistry panels were performed for both bitches. Maggot removal and reduction and replacement of the prolapsed uteri were attempted under sedation and general anaesthesia respectively. In hospital treatment included intravenous fluids and third-generation cephalosporins.

Results: Both bitches showed acute inflammation on haematological evaluation. Significant reduction occurred with the younger bitch 24 hours after lavage was attempted compared to 72 hours with the older bitch. After successful replacement of the uteri, routine ovariohysterectomy was performed on each bitch.

Conclusion: Uterine prolapse is a rare condition in canids compared to other domestic species. Reduction and replacement of the uteri were successful followed by routine ovariohysterectomy. Both bitches were healthy and doing well on follow-up examinations.
Surgical Management of Long Bone Fractures in Dogs: 53 Cases  
(April 2009-March 2010)  
TN Ganesh, S Bridglalsingh

Department of Clinical Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine Campus, Trinidad and Tobago.
E-mail: Thotta.Ganesh@sta.uwi.edu

ABSTRACT

Background and Objectives: Fractures in dogs are the most common among the orthopaedic conditions treated at the Veterinary Teaching Hospital (VTH), Mount Hope. Hence, the objective of this paper was to study the incidence, aetiology and the surgical management of long bone fractures in dogs.

Design and Methods: The data on the long bone fractures and their surgical management were obtained from the records of the Small Animal Hospital of the VTH and were analysed. The data comprised of the breed, sex, age, aetiology of trauma, bones involved, types of fracture and the fracture fixation techniques adapted for the individual cases.

Results: Among the 584 operations performed on dogs during the period April 2009 to March 2010, 53 were for the repair of long bone fractures which accounted for 37.06 % the orthopaedic operations performed. Of the breeds encountered, mixed breeds (75.47%) were the most common. Road Traffic Accident (54.71%) was the most common aetiological factor. The bones affected were 58.49% femur, 18.86% tibia, 18.86% humerus and 3.77% radius and ulna. Most of the fractures (83.01%) involved the diaphysis. The fixation techniques chosen for diaphyseal fractures were either intramedullary pinning with or without auxiliary fixation (87.17%) or bone plating (12.82%).

Conclusion: Long bone diaphyseal fractures were the most common types of fractures in dogs requiring surgical repair. Hence, the minimally invasive orthopaedic surgical techniques to manage long bone diaphyseal fractures in dogs viz: inter locking nailing and per cutaneous plate osteosynthesis will be introduced by the authors to benefit the patients.
ABSTRACT

Background and Objectives: A 1 year old male neutered domestic short-haired cat presented to the veterinary teaching hospital with the complaint of being constipated for approximately 1 week. The cat had a history of dysuria as well as bilateral hind-limb paresis ever since he was found as a kitten. The owner tried enemas and oral laxatives for 3 days but with no response.

Findings & Outcome: Haematology revealed a neutrophilia due to inflammation and a thrombocytopenia, serum biochemistry was unremarkable. The urinary bladder was easily expressed. Abdominal radiographs revealed faecal impaction of the ascending, transverse and descending colon. A diagnosis of megacolon was made based on clinical signs and radiographic findings. A subtotal colectomy was performed by resecting from the distal ileum to the distal colon.

The cat was discharged on a soft food diet and the owner instructed to monitor passage of faeces and urine. Post-operative radiographs revealed no evidence of faecal stasis 2 weeks later. At 3 months after surgery the owner reported the cat to be eating and drinking well and passing faeces normally. However, the cat died about 7 months after surgery with the owner reporting a 25% decrease in appetite and slight reduction in activity.

Conclusion: Neurological deficits of the urinary bladder, hind-limbs and colon were determined based on physical examination as well as from radiological findings which were suggestive of lower motor neuron lesions. Unfortunately the carcase was not available for necropsy so no further analysis was performed. This case however showed that a cat with megacolon and hind-limb paresis can be successfully managed surgically.
Femoral Head and Neck Excision (Fhne) Arthroplasty in Dogs – A Two - Year Study with Special Reference to Surgical Indication and Outcome

TN Ganesh, S Bridglalsingh

Department of Clinical Veterinary Sciences, Faculty of Medical Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago
E-mail: Thotta.Ganesh@sta.uwi.edu

ABSTRACT

Background and Objectives: This study was done to find the outcome of FHNE arthroplasty performed without any muscle interposition in dogs with special reference to the indications for surgery and the outcome.

Design and Methods: The retrospective data on FHNE were obtained from the records of the Veterinary Teaching Hospital for the period from April 2008 to March 2010. The data included the signalment, indications for surgery and the body weight of the dogs. The outcome of the surgery graded as excellent, good, fair and poor was assessed based on the information provided by the dog owners.

Results: A total number of 39 FHNE were performed. The indications were Coxofemoral luxation due to trauma (46.1%), Coxofemoral luxation due to Canine Hip Dysplasia (CHD) (30.7%), CHD with Degenerative Joint Disease (DJD) (7.6%), Fracture femoral head/neck (7.6%), Fracture acetabulum (5.1%) and Avascular necrosis of femoral head and neck (2.5). The outcome of the surgery was assessed by locomotor assessment qualitatively as excellent in 45.9% of cases, good in 35.1% of cases, fair in 8.1% of cases and poor in 10.8% of cases. Among the dogs with excellent outcome 24.3% weighed below 18 kg, 8.1% weighed between 18 and 25 kg and 13.5% weighed above 25 kg at the time of surgery. Among good outcome it was 21.6%, 10.8%, 2.7%; among fair outcome it was 0.0%, 2.7%, 5.4% and among poor outcome it was 2.7%, 2.7% and 5.4% respectively.

Conclusion: FHNE without muscle interposition provided good to excellent outcome in 81.0% of cases with the suggestion to apply this technique for the above mentioned conditions for dogs weighing below 18 kg.
ABSTRACT

Background and Objectives: A four-year thoroughbred mare presented to the Veterinary Teaching Hospital (VTH) for treatment of a stromal abscess in the right cornea with accompanying severe anterior uveitis. The referring veterinarian had noticed a small 1.5 mm stromal opacity and diagnosed a stromal abscess three weeks prior to presentation. Design and Methods: On ophthalmic examination, the horse presented with lacrimation, blepharospasm and severe corneal edema and corneal vascularisation in the right eye. There was a 4 mm diameter central deep stromal abscess which appeared as a central stromal opacity. A keratectomy was performed. A dorsal conjunctival pedicle flap was used to close the defect using 8/0 vicryl in a simple interrupted pattern. A sub-palpebral lavage system was inserted to deliver frequent topical medications to the cornea without having to touch the eye. Samples of the corneal abscess were sent for cytological and bacteriological evaluation. For the first 24 h the following drugs were administered: topical ofloxacin ophthalmic solution, tropical atropine sulphate ophthalmic solution and trimethoprim-sulphamethoxazole tablets per os and banamine intravenously. A face mask with an eye cup was placed over the right eye.

Results: Cytology sample revealed a few small rods while culture failed to grow any bacteria or fungi. Three days post-op, the horse started opening her eyelids and the anterior chamber and pupil could be seen on examination. By two weeks post-op, the horse appeared to have vision in the right eye and fundic detail appeared normal.

Conclusion: It was concluded that in cases of deep stromal abscesses in the cornea of horses, surgical intervention using conjunctival pedicle flaps does provide an adequate treatment option to the use of corneal grafts.
# Author Index

<table>
<thead>
<tr>
<th>Authors</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams AP</td>
<td>Charles SK</td>
</tr>
<tr>
<td>Adebayo AS</td>
<td>Charles W</td>
</tr>
<tr>
<td>Adesiyun AA</td>
<td>Chen D</td>
</tr>
<tr>
<td>Adogwa AO</td>
<td>Chin J</td>
</tr>
<tr>
<td>Al-Bayaty H</td>
<td>Cleary JD</td>
</tr>
<tr>
<td>Ali Z</td>
<td>Cuthbert C</td>
</tr>
<tr>
<td>Allicock OM</td>
<td>Davis G</td>
</tr>
<tr>
<td>Adesiyun AA</td>
<td>Deane GY</td>
</tr>
<tr>
<td>Anderson-Foster N</td>
<td>Dindial K</td>
</tr>
<tr>
<td>Arrigo NC</td>
<td>Evernden K</td>
</tr>
<tr>
<td>Auguste AJ</td>
<td>Extavour RM</td>
</tr>
<tr>
<td>Auguste T</td>
<td>Ezeokoli CD</td>
</tr>
<tr>
<td>Baboolal N</td>
<td>Fane U</td>
</tr>
<tr>
<td>Bacchus R</td>
<td>Foster JE</td>
</tr>
<tr>
<td>Bakos Z</td>
<td>Fother Je</td>
</tr>
<tr>
<td>Balkaran RL</td>
<td>Ganesh TN</td>
</tr>
<tr>
<td>Basu A</td>
<td>George L</td>
</tr>
<tr>
<td>Basu AK</td>
<td>George N</td>
</tr>
<tr>
<td>Bennett SN</td>
<td>Georges K</td>
</tr>
<tr>
<td>Bhola R</td>
<td>Gordon AC</td>
</tr>
<tr>
<td>Bodilenyane A</td>
<td>Gordon M</td>
</tr>
<tr>
<td>Branday Mes</td>
<td>Harewood W</td>
</tr>
<tr>
<td>Bridgalsingh S</td>
<td>Hariharan S</td>
</tr>
<tr>
<td>Campbell M</td>
<td>HarrackSingh A</td>
</tr>
<tr>
<td>Carrington CVF</td>
<td>Harris R</td>
</tr>
<tr>
<td>Chadee DD</td>
<td>Hosein A</td>
</tr>
<tr>
<td>Chapman S</td>
<td>Ignacio D</td>
</tr>
</tbody>
</table>
AUTHOR INDEX (Cont’d)

AUTHORS

INDAR G F3
ISITOR G C4
ISITOR I B9
ITIOLA OA E2
JAGGAT AN B1
JERRY C F3
JOHNSON C B10
JUSTIZ-SMITH N E1
KHAN O B3
KOMA LM F9
KOMA M F6
LEGAL C F6
LEGALL C F9, F15
LEGALL C F9, F15
LEGALL G B13
LEMEY P C2
LEWIS M A2
LUE-FATT L B14
MAHARAJ D B14
MAHARAJ N B14
MAHARAJ P B3
MAHARAJ S B14
MAHARAJ V B14
MALONEY V B14
MANJUNATH M E4
MARCHAN S D4
MARCHAN SM D2
MARSHALL JR C4, F1
MARTINEZ R C1

AUTHORS

McRAE A B15
MILNE DM B6
MOHAMMED F B2
MOHAMMED S B13
MOKOKA PK F10
MONTSERIN SAS F8, F17
MOONAN N F13
MOORE-CLARKE N B9
MOOTOO NFA F5, F6, F9, F15
MUELLER BA C2
MUNGRUE K B5, B7
MUÑOZ K F5, F8, F15
MURRAY D B8
NAIDU RS D1, D3
NARAYANSINGH V A4
NAYAK BS B14, C4, C5
OFFIAH VN F2
OGEER I B5, B7
OSADEBAY J B9
PARGASS I F5
PARYAG A D4
PELLOW DS E3
PEREIRA LP A3
PERSAD K F2
PERSAD S B8
PERSAUD S B10
POTTINGER AM F4
PRAYMAN E D1
AUTHOR INDEX (Cont’d)

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th></th>
<th>AUTHORS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PYBUS OG</td>
<td>C2</td>
<td>SAHADEO A</td>
<td>B12</td>
</tr>
<tr>
<td>RAFFEEK RN</td>
<td>D4</td>
<td>SAMMY I</td>
<td>A1</td>
</tr>
<tr>
<td>RAFFEEQ S</td>
<td>B10</td>
<td>SANKAR K</td>
<td>SANKAR K</td>
</tr>
<tr>
<td>RAGOOBAR S</td>
<td>B10</td>
<td>SCANTLEBURY B</td>
<td>SCANTLEBURY B</td>
</tr>
<tr>
<td>RAGOONANAN D</td>
<td>B10</td>
<td>SEALEY DS</td>
<td>B10</td>
</tr>
<tr>
<td>RAGOONANAN K</td>
<td>B7</td>
<td>SEALEY PI</td>
<td>E4, E5, E6</td>
</tr>
<tr>
<td>RAILWAH C</td>
<td>B10</td>
<td>SEEVARANSINGH R</td>
<td>F8</td>
</tr>
<tr>
<td>RAMADHIN S</td>
<td>B10</td>
<td>SEEMUNGAL T</td>
<td>B6, B9, B11, B12</td>
</tr>
<tr>
<td>RAMCHARAN C</td>
<td>B10</td>
<td>SEEPERSAD N</td>
<td>F4</td>
</tr>
<tr>
<td>RAMDASS K</td>
<td>F1</td>
<td>SHARMA S</td>
<td>B9</td>
</tr>
<tr>
<td>RADMATH DD</td>
<td>B4, C3, C4, C6</td>
<td>SHI J</td>
<td>C4</td>
</tr>
<tr>
<td>RAMDEEN R</td>
<td>C5</td>
<td>SIMEON D</td>
<td>B4</td>
</tr>
<tr>
<td>RAMJITSINGH-SAMUEL M</td>
<td>B8</td>
<td>SINANAN A</td>
<td>B3</td>
</tr>
<tr>
<td>RAMKISSOON A</td>
<td>B6</td>
<td>SINGH K</td>
<td>B5, B7</td>
</tr>
<tr>
<td>RAMPERSAD DA</td>
<td>B3</td>
<td>SINGH M</td>
<td>F6, F9</td>
</tr>
<tr>
<td>RAMPERSAD FS</td>
<td>B3</td>
<td>SINGH S</td>
<td>C6</td>
</tr>
<tr>
<td>RAMPERSAD R</td>
<td>F3</td>
<td>SMALL J</td>
<td>F11</td>
</tr>
<tr>
<td>RAMROOP VV</td>
<td>D3</td>
<td>SMITH WAJ</td>
<td>D2, D4</td>
</tr>
<tr>
<td>RAMSEWAK SS</td>
<td>B1</td>
<td>SPARAGANO OAE</td>
<td>F4</td>
</tr>
<tr>
<td>RAO C</td>
<td>A3, A4</td>
<td>STEWART-JOHNSON A</td>
<td>F1, F11</td>
</tr>
<tr>
<td>RAWLINS JM</td>
<td>B4</td>
<td>STEWART R</td>
<td>B15</td>
</tr>
<tr>
<td>REED M</td>
<td>F3</td>
<td>SUCHARD MA</td>
<td>C2</td>
</tr>
<tr>
<td>RILEY CK</td>
<td>E2</td>
<td>SUEPAUL R</td>
<td>F11</td>
</tr>
<tr>
<td>RIOS M</td>
<td>B6, B9, B11, B12</td>
<td>SWANSTON W</td>
<td>E4</td>
</tr>
<tr>
<td>ROBERTSON S</td>
<td>F12</td>
<td>SWARATH SM</td>
<td>B13</td>
</tr>
<tr>
<td>ROSA AP</td>
<td>C1</td>
<td>SWIATLO E</td>
<td>E6</td>
</tr>
<tr>
<td>SA B</td>
<td>A3, A4</td>
<td>TASKER S</td>
<td>F4</td>
</tr>
<tr>
<td>SAGAM R</td>
<td>F2</td>
<td>TATUM AJ</td>
<td>C2</td>
</tr>
</tbody>
</table>
**AUTHOR INDEX (Cont'd)**

**AUTHORS**

<table>
<thead>
<tr>
<th>Author Name</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEELUCKSINGH S</td>
<td>B13</td>
</tr>
<tr>
<td>TESH RB</td>
<td>C1</td>
</tr>
<tr>
<td>THANNOO G</td>
<td>B13</td>
</tr>
<tr>
<td>TOOLSIE A</td>
<td>B13</td>
</tr>
<tr>
<td>THORNTON A</td>
<td>B10</td>
</tr>
<tr>
<td>TONEY-DUNCAN J</td>
<td>B13</td>
</tr>
<tr>
<td>TRAVASSOS D</td>
<td>C1</td>
</tr>
<tr>
<td>TSHUKUDU T</td>
<td>F12</td>
</tr>
<tr>
<td>VERSTAPPEN K</td>
<td>F1</td>
</tr>
<tr>
<td>WAGENAAR J</td>
<td>F1</td>
</tr>
<tr>
<td>WEAVER SC</td>
<td>C1</td>
</tr>
<tr>
<td>WEDZICHA JA</td>
<td>B11</td>
</tr>
<tr>
<td>WEEKES SL</td>
<td>F10</td>
</tr>
<tr>
<td>WILLIAMS G</td>
<td>F17</td>
</tr>
<tr>
<td>WILLIAMS S</td>
<td>A3, A4</td>
</tr>
<tr>
<td>WILSON J</td>
<td>A1</td>
</tr>
<tr>
<td>XUE S</td>
<td>C4</td>
</tr>
</tbody>
</table>
### SUBJECT INDEX

<table>
<thead>
<tr>
<th>A</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal Cavity – ultrasonography</td>
<td>F6 41</td>
</tr>
<tr>
<td>Abscess - surgery</td>
<td>F17 52</td>
</tr>
<tr>
<td>Adiponectin - adverse effects</td>
<td>C5 24</td>
</tr>
<tr>
<td>Aedes - virology</td>
<td>C1 20</td>
</tr>
<tr>
<td>Aged</td>
<td>B4, B15 9, 20</td>
</tr>
<tr>
<td>Americas - epidemiology</td>
<td>C2 21</td>
</tr>
<tr>
<td>Amphotericin B</td>
<td>E5 34</td>
</tr>
<tr>
<td>Anemia, Sickle Cell - mortality</td>
<td>B12 17</td>
</tr>
<tr>
<td>Anemia, Sickle Cell - statistics and numerical data</td>
<td>B9 14</td>
</tr>
<tr>
<td>Animals, Domestic</td>
<td>F3 38</td>
</tr>
<tr>
<td>Anthelmintics - analysis</td>
<td>F2 37</td>
</tr>
<tr>
<td>Anthocyanins - therapeutic use</td>
<td>C6 25</td>
</tr>
<tr>
<td>Antifungal Agents - therapeutic use</td>
<td>E5 34</td>
</tr>
<tr>
<td>Arthroplasty - veterinary</td>
<td>F16 51</td>
</tr>
<tr>
<td>Audiovisual Aids - education</td>
<td>D4 29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacteria</td>
<td>F4, F11 39, 46</td>
</tr>
<tr>
<td>Blighia - chemistry</td>
<td>E1 30</td>
</tr>
<tr>
<td>Brain - blood supply</td>
<td>F12 47</td>
</tr>
<tr>
<td>Brain Injuries</td>
<td>B2 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular Diseases - complications</td>
<td>B5 10</td>
</tr>
<tr>
<td>Caribbean Region</td>
<td>A2, B6, B9, E3 2, 11, 14, 32</td>
</tr>
<tr>
<td>Cataract Extraction - trends</td>
<td>B8 13</td>
</tr>
<tr>
<td>Cats - abnormalities</td>
<td>F15 50</td>
</tr>
<tr>
<td>Subject</td>
<td>Reference</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Cats - parasitology</td>
<td>F4, F5, F8</td>
</tr>
<tr>
<td>Clinical Competence</td>
<td>D2, D3</td>
</tr>
<tr>
<td>Computer Literacy</td>
<td>A5</td>
</tr>
<tr>
<td>Cornea - abnormalities</td>
<td>F17</td>
</tr>
<tr>
<td>Craniocerebral Trauma</td>
<td>B3</td>
</tr>
<tr>
<td>Culicidae - virology</td>
<td>C1</td>
</tr>
<tr>
<td>Curriculum</td>
<td>A3</td>
</tr>
<tr>
<td>Dementia</td>
<td>B15</td>
</tr>
<tr>
<td>Dengue Virus - analysis</td>
<td>C2</td>
</tr>
<tr>
<td>Dental Care for Children - standards</td>
<td>D3</td>
</tr>
<tr>
<td>Diabetes Complications - prevention and control</td>
<td>B13</td>
</tr>
<tr>
<td>Diabetes Mellitus, Type 2</td>
<td>B14, C3, C5</td>
</tr>
<tr>
<td>Dicrocoeliidae</td>
<td>F8</td>
</tr>
<tr>
<td>Dietary Sucrose – analysis</td>
<td>C6</td>
</tr>
<tr>
<td>DNA Methylation</td>
<td>C3</td>
</tr>
<tr>
<td>DNA Probes - diagnostic use</td>
<td>F4</td>
</tr>
<tr>
<td>Dogs</td>
<td>F13, F14, F16</td>
</tr>
<tr>
<td>Domestic Violence - trends</td>
<td>B1</td>
</tr>
<tr>
<td>Drug Resistance, Microbial</td>
<td>E4, F11</td>
</tr>
<tr>
<td>E</td>
<td>D4</td>
</tr>
<tr>
<td>Education, Dental - methods</td>
<td>D4</td>
</tr>
<tr>
<td>Education, Dental, Graduate</td>
<td>D2</td>
</tr>
<tr>
<td>Education, Distance</td>
<td>A5</td>
</tr>
<tr>
<td>Education, Medical, Graduate- manpower</td>
<td>A2</td>
</tr>
<tr>
<td>Education, Medical, Undergraduate</td>
<td>A4</td>
</tr>
<tr>
<td>Education, Pharmacy</td>
<td>E3</td>
</tr>
<tr>
<td>Emergency Medical Services - standards</td>
<td>D3</td>
</tr>
<tr>
<td>Endangered Species</td>
<td>F3</td>
</tr>
</tbody>
</table>
Enterotoxemia - diagnosis  
Erythromycin - therapeutic use  

**F**  
Fluconazole  
Foreign Medical Graduates  
Fractures, Bone - surgery  

**G**  
Gastrointestinal Diseases - parasitology  
Gene Silencing  
Goats - blood  

**H**  
Health Manpower - supply and distribution  
Health Personnel  
Health Services for the Aged  
Hematology  
Hemodialysis Units, Hospital - standards  
Hemodialysis, Home - standards  
Histoplasmosis - diagnosis  
Horses - abnormalities  
Hypertension  
Hypertension, Pulmonary  
Hypertrophy, Left Ventricular  
Hyperventilation - therapy  

**I**  
Inflammation  
Insulin - analysis  
Insulin Resistance  

**L**  
Lipids - analysis
<table>
<thead>
<tr>
<th>M</th>
<th>E6</th>
<th>35</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mannose-Binding Lectin - therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical Informatics</td>
<td>A1</td>
<td>1</td>
</tr>
<tr>
<td>Medical Informatics Applications</td>
<td>A1</td>
<td>1</td>
</tr>
<tr>
<td>Medication Errors</td>
<td>B6</td>
<td>11</td>
</tr>
<tr>
<td>Megacolon - surgery</td>
<td>F15</td>
<td>50</td>
</tr>
<tr>
<td>Methicillin Resistance</td>
<td>F1</td>
<td>36</td>
</tr>
<tr>
<td>Methicillin-Resistant Staphylococcus aureus</td>
<td>F1</td>
<td>36</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>B14</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>F2</th>
<th>37</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nematoda - parasitology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O</th>
<th>C5</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Health</td>
<td>D1</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P</th>
<th>F2, F5, F8</th>
<th>37, 40, 43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parasites</td>
<td>D3</td>
<td>28</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>C4</td>
<td>23</td>
</tr>
<tr>
<td>Plants, Medicinal - therapeutic use</td>
<td>B1</td>
<td>6</td>
</tr>
<tr>
<td>Pregnant Women</td>
<td>A4</td>
<td>4</td>
</tr>
<tr>
<td>Problem-Based Learning</td>
<td>D2</td>
<td>27</td>
</tr>
<tr>
<td>Professional Competence</td>
<td>B9, B11</td>
<td>14, 16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q</th>
<th>B10, E2</th>
<th>15, 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Assurance, Health Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality Control</td>
<td>E2</td>
<td>31</td>
</tr>
</tbody>
</table>
### R
- Rabbits - blood: F12, 47
- Radiography, Abdominal - utilization: F9, 44
- Radiography, Thoracic - utilization: F9, 44
- Renal Dialysis: B10, 15
- Respiration Disorders: F7, 42
- Rodentia - physiology: F6, F9, F12, 41, 44, 47

### S
- Sheep Diseases - parasitology: F2, 37
- Smoking - adverse effects: D1, 26
- Smoking Cessation: D1, 26
- Starch – analysis: E2, 31
- Sus scrofa – parasitology: F1, 36

### T
- Teaching Materials: D4, 29
- Tomography, X-Ray Computed - utilization: B3, 8
- Trinidad and Tobago – epidemiology: E4, F1, F2, F4, F5, F8, F11, 33, 36, 37, 39, 40, 43, 46
- Trinidad and Tobago – ethnology: A5, B5, B7, B8, B10, C3, C5, 5, 10, 12, 13, 15, 22, 24
- Turtles: F3, 38

### U
- Ultrasonography - utilization: F6, 41
- Uterine Prolapse - therapy: F13, 48

### V
- Vaccinium macrocarpon: C4, 23
- Viruses - transmission: C1, 20
- Vitis: C4, 23
W

Wounds and Injuries - therapy C4 23