doi: http://dx.doi.org/10.5016/1806-8774.2010v12pA1

ARBS Annual Review of Biomedical Sciences

Meeting Abstracts

pdf freely available at http://arbs.biblioteca.unesp.br

2010;12:A1-A86

5th Graduation Meeting *

Botucatu Medical School
São Paulo State University - UNESP

Coordinators

Dra. Márcia Guimarães da Silva

Department of Patology
Botucatu Medical School
São Paulo State University
Botucatu, SP, BRAZIL
E-mail: mgsilva@fmb.unesp.br

Dra. Denise Fecchio

President of the Committee of the Graduate Programs
Botucatu Medical School
São Paulo State University
Botucatu, SP, BRAZIL
E-mail: dfecchio@fmb.unesp.br

Botucatu, São Paulo, Brazil
03-05 December 2009

* Scientific content, writing and style of the Abstracts were reviewed by the organizers.

Organizing Committee

Ana Paula F Cardoso

Ana Paula Ferraz da Silva

Bruna Ribeiro de A Ramos

Camila Bonomo

Daniel Bassetto Jesuino

Eliana Peresi

Gabrielli Brianezi

Glauber Dallanezi

Igor Otavio Minatel

Karina Basso Santiago

Natália Prearo Moço

Nelson F Serrão Jr.

Viviane M Pascotto

Support Committee

Bruno José Fajiolli

Camila Fernanda Z Creste

Juliana Ravelli B Martins

Larissa Ragozo C de Oliveira

Paula Scatena

Regina Avelina de Moraes da Silva

Ricardo Luiz Damatto

Thales Domingues Arantes

Scientific Committee

Prof. Dr. Aluisio Cotrim Segurado (USP/SP)

Profa. Dra. Maria Lúcia do Carmo Cruz Robazzi (USP/Ribeirão Preto)

Prof. Dr. Peter Koop (Northwestern University - USA)

Prof. Dr. Steven S. Witkin (Weill Cornell Medical College - USA)

Profª. Drª. Tânia de Freitas Raso (USP/SP)

CONTENTS*

*For searching author name, filiation or subject, use the search tool of your pdf software.

Editorial

Márcia Guimarães da Silva, Denise Fecchio

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

The 5th Graduation Meeting of the Graduate Programs at the Botucatu Medical School, São Paulo State University/UNESP, was entirely organized by graduate students and held from December 3rd to 5th, 2009. During the meeting it was discussed basic, translational and clinical sciences and also the strategies for achieving excellence in the Graduate Programs. The event gathered 170 researchers, including professionals, graduate and undergraduate students of this University and also from other Brazilian universities. The invited speakers, including Maria Elena Nader-Macías, from Tucuman/Argentina, promoted important opportunities to discuss advanced topics of different areas of human health-oriented biosciences. The event was supported by the UNESP, The São Paulo State Foundation for Reseaarch (FAPESP), The Agency for the Improvement of Graduate Studies in Higher Education (CAPES) and other local sponsors. Considering the success of this event, the next Graduation Meeting should happen in 2010 in order to continue discussing science at high-level.

Abstracts

Serological Profile of Toxoplasmosis in Pregnancy

Adriana SAA Barbosa[1], Monica Silveira[2], Emerson A Sobrinho[2], Paulo CM Pereira[1]

[1] UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho", Botucatu, SP, BRAZIL
[2]Biolab – Laboratório de Análises Clínicas Biolab, Bauru, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Barbosa ASAA, Silveira M, Sobrinho EA, Pereira PCM. Serological Profile of Toxoplasmosis in Pregnancy. Annu Rev Biomed Sci 2010;12:A6. Toxoplasma gondii can cause fetal infection by transplacental transmission in mothers who are infected during pregnancy or significantly immunocompromised due to chronic infection. The aim of this study was to describe and analyze serum for toxoplasmosis in pregnant women seen at the Biolab Laboratory of Clinical Analysis - Bauru/SP. Between October 2008 and May 2009, the data were obtained by collecting blood from pregnant women undergoing pre-natal examination. The variable studied was the serology result for toxoplasmosis after detection of IgG antibodies. The serological method used was the enzymatic method by micro-particles. IgG was considered to be reactive when concentration was greater than 6 UI/ml, and non-reactive when the concentration was less than 5 UI/ml. The pregnant women were considered to be serum-positive if the IgG concentration was reactive. Six-hundred twenty-two patients were studied in the period, and 17% seropositivity for toxoplasmosis was found, corresponding to 101 patients. The mean age of the studied patients was 26 years, ranging from 15 to 45 years. In conclusion, a low prevalence of infection was found in pregnant women. Whenever maternal serology indicates risk, the newborn must be IgM-tested and followed-up during the first year of life. Integration between different levels of provisional care in the public system is necessary so as to achieve maximum efficiency in controlling gestational and congenital toxoplasmosis.

Financial support: Laboratório Sobrinho LTDA.

Long-Term Effects of Zoledronic Acid on the Femurs of Ovariectomized Rats. A Prospective Randomized Trial*

Evandro P Palacio[1], Sérgio S Muller[2], Fernando RA Pereira[1], Eduardo M Jacob[1], Ricardo C Dutra[1], Thiago B Campi[1], Thiago CR Olímpio[1]

[1] FAMEMA – Faculdade de Medicina de Marília, Marília, SP, BRAZIL
[2] UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho", Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Palacio EP, Muller SS, Pereira FRA, Jacob EM, Dutra RC, Campi T B, Olímpio TCR. Long-Term Effects of Zoledronic Acid on the Femurs of Ovariectomized Rats. A Propective Randomized Trial. Annu Rev Biomed Sci 2010;12:A7. The purpose of this study was to evaluate the biomechanical and microtomographic effects of zoledronic acid on the femurs of ovariectomized rats after one year of follow-up. Eighty female rats (*Rattus novergicus albinus*, Wistar lineage) were prospectively assessed. Within 60 days, animals were randomized into two groups according to surgical procedure: bilateral ovariectomy (group O) (n=40) and sham surgery (group S) (n=40). When animals were 90 days old, groups O and S were subdivided into four other groups, according to the intraperitoneal administration of a single 0.1 mg/kg dose of zoledronic acid (ZA) or deionized water (DW): OZA (n=20), ODW (n=20), SZA (n=20) and SDW (n=20). Animals were killed at 15 months of age. The femur intertrochanteric region was selected for investigation. For biomechanical analysis, axial compression tests were performed on the right femurs. The left femurs were used for microtomographic study. Groups treated with zoledronic acid (OZA and SZA) had a significant increase in maximum bone load resistance compared with groups treated with deionized water (ODW and SDW) ($p<0.001$). A significant enlargement in cancellous bone volume was also observed in groups OZA and SZA, compared with groups ODW and SDW ($p<0.001$). Multiregression analysis revealed a significant positive correlation between maximum bone load resistance and cancellous bone volume ($p=0.008$; $r=0.991$). In this study, zoledronic acid administration led to a significantly increase in bone load resistance and cancellous bone volume. These data suggest that zoledronic acid administration might improve osteoporosis treatment outcomes in human beings.

* The authors declare no potential conflicts of interest.

Importance of the Elaboration of an Experimental Model for the Study of Female Urinary Incontinence: a Literature Update

Gabriela Marini[1], Angélica MP Barbosa[1], Débora C Damasceno[1], Selma MM Matheus[2], Marilza Vieira C Rudge[1]

[1] Laboratory of Experimental Research of Gynecology and Obstetrics, Department of Gynecology and Obstetrics, Botucatu Medical School, São Paulo State University (UNESP), Botucatu, SP, BRAZIL

[2] Department of Anatomy, Institute of Biosciences, São Paulo State University (Unesp), Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

*Marini G, Barbosa AMP, Damasceno DC, Matheus SMM, Rudge MVC. Importance of the Elaboration of an Experimental Model for the Study of Female Urinary Incontinence: A Literature Update. Annu Rev Biomed Sci 2010;12:A8.*The objective of this study was to accomplish an update on the literature published in recent years using an experimental model to investigate the association of urethral changes with urinary incontinence. A systematic review of the National Center of Biotechnology Information database (NCBI - PUBMED) and the SCIELO database was performed using urinary incontinence, urethra, female, rats and diabetes.as key-words. A total of 394 articles were found. From these, 21.3% were related to the research objective. Considering the 21.3% of the articles studied as 100%, 22.7% of them reported studies in rats, and 77.3% reported human studies, 32% specifically addressed the search topic and 68% were more general, 3.6% were specific and performed in Brazil, 16.6% focused on diabetes, 52.3% focused on urinary incontinence, 32.1% focused on the urethra and 9.5% integrated topics. In conclusion, there is a strong correlation among the genesis of urinary incontinence, urethral changes and *Diabetes mellitus*. Due to the similarity of normal skeletal muscle distribution and urethral anatomy are similar in humans and rats, animal models are appropriate for relevant experimental studies of the mechanisms of continence and incontinence in women, providing valuable solutions for clinical practice.

Financial Support: FAPESP (2008/00989-4)

* **Correspondence**
Marilza VC Rudge. Faculdade de Medicina de Botucatu, UNESP, Departamento de Ginecologia, Obstetrícia e Mastologia, Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: marilzarudge@ig.com.br

Evaluation of Negative Serum Samples in Immunodiffusion Test from Confirmed Paracoccidioidomycosis Patients

Talísia C Moreto[1], Adriana PV Moreira[2], Angela N Passos[2], Valdelene S Kohara[2], Lídia R Carvalho[1], Rinaldo P Mendes[1]

[1] UNESP - Universidade Estadual Paulista "Júlio De Mesquita Filho", Botucatu, SP, BRAZIL
[2] IAL - Instituto Adolfo Lutz, São Paulo, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Moreto TC, Vicentini-Moreira AP, Passos AN, Kohara VS, Carvalho LR, Mendes RP. Evaluation of Negative Serum Samples in Immunodiffusion Test from Confirmed Paracoccidioidomycosis Patients. Annu Rev Biomed Sci 2010;12:A9. Approximately 10% of paracoccidioidomycosis patients with a mycological diagnosis present negative immunodiffusion and constituted the objective of this study. Serum samples from 32 patients with confirmed paracoccidioidomycosis but negative immunodiffusion before treatment were evaluated. As controls, positive sera from 32 additional confirmed patients were analyzed. These assays were carried out at the Research Laboratory of Tropical Diseases (RLTD) - FMB/UNESP and at the Adolfo Lutz Institute (ALI) - SP. DID was performed using culture filtrate antigens from Pb-113 prepared at the Laboratory of Clinical Mycology – UNESP/Araraquara (DIDr); and from Pb-113 (DID_1) and Pb-B-339 (DID_2) prepared at ALI. Immunoblotting was also carried out using strains Pb-113 (IB_1) and PbB-339 (IB_2). Statistical analysis was carried out by McNemar's or binomial test with significance established at $p<0.05$. Analysis showed that DID performed at RLTD presented no difference in positivity among the three antigens. DID performed at ALI presented no difference in positivity between DID_1 and DID_2, but results were higher than in DIDr. Reproducitibility between laboratories was observed with DID_1 and DID_2, but DIDr presented higher positivity at RLTD. There was no difference in positivity for IB_1-gp43, IB_2-gp70 and IB_2-gp43, but a higher positivity was found than for IB_2-gp70. DID positivity was lower than IB_1-gp43, IB_2-gp43 and IB_2-gp43 recognition, but higher than IB_2-gp70. These findings suggest that DID sensitivity is not increased when different antigens are used. Moreover, negative serum in DID should be evaluated by immunoblotting with gp43 recognition, using Pb-113 or Pb-B-339 antigen. However, immunoblotting specificity should be carefully evaluated.

Financial support: CAPES

Repercussions of Mild Diabetes on the Pregnancy of Wistar Rats and on Development of Their Offspring

Felipe H Saito, Glilciane Morceli, Yuri K Sinzato, Iracema MP Calderon, Marilza VC Rudge, Débora C Damasceno*

Gynecology and Obstetrics Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Saito FH, Morceli G, Sinzato YK, Calderon IMP, Rudge MVC, Damasceno DC. Repercussions of the Mild Diabetes on the Pregnancy of Wistar Rats and on Development of Their Offspring. Annu Rev Biomed Sci 2010;12:A10. Introduction: Experimental models are necessary to elucidate physiopathological mechanisms not yet understood in humans. Objective: To evaluate the repercussions of mild diabetes on the pregnancy of Wistar rats and on development of their offspring. Materials and Methods: On the day of their birth, female offspring were distributed into two experimental groups: Group streptozotocin (STZ, n=67): received the â-cytotoxic agent (100mg STZ/kg body weight - sc) on the 1st day of the life; and Non-diabetic Group (ND, n=14): received the vehicle in a similar time period. In adult life, the animals were mated. After a positive diagnosis of pregnancy (0), female rats from group STZ presenting with glycemia lower than 120 mg/dL received 20 mg STZ/kg (ip) on the 7th day of pregnancy. The female rats with glycemia higher than 120mg/dL were discarded because they reproduced results already found in the literature. During the pregnancy, glycemia and insulin and glucose tolerance tests were carried out. On the 21st day of pregnancy (at term), the rats were anesthetized and killed for maternal reproductive performance and fetal development analysis. Statistical significance was considered as $p<0.05$. Results: STZ rats presented with glucose intolerance, insulin resistance, increased rates of pre- (STZ=22.0%; ND=5.1%) and post-implantation losses (STZ=26.1%; ND=5.7%), reduced rates of fetuses with appropriate weight for gestational age (STZ=66.0%; ND=93.0%), and higher rate of fetal skeletal anomalies (abnormal sternebrae, STZ=22.0%; ND=2.5%) and decreased phalange numbers compared to group ND. Conclusion: Mild diabetes impaired maternal reproductive performance and embryo-fetal development.

Financial Support: FAPESP (2006/03768-3)

* **Correspondence**

Débora C Damasceno. Faculdade de Medicina de Botucatu, UNESP, Departamento de Ginecologia e Obstetrícia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: damasceno@fmb.unesp.br

Effect of Exercise on Biochemical Profiles, Reproductive Outcomes, and Fetal Anomalies of Diabetic Rats

Aline BGT Volpato, Kleber E Campos, Bruna Dallaqua, Iracema MP Calderon, Débora C Damasceno

UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho" – Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Bueno A, Volpato GT, Campos KE, Dallaqua B, Calderon IMP, Damasceno DC. Effect of Exercise on Biochemical Profiles, Reproductive Outcomes, and Fetal Anomalies of Diabetic Rats. Annu Rev Biomed Sci 2010;12:A11. Diabetes mellitus in pregnancy is associated with miscarriage and congenital anomalies in the offspring. This study aimed to characterize biochemical profiles, reproductive outcomes, and frequencies of anomalies in the fetuses of an animal model of diabetic pregnancy exposed to an exercise program. Methods: Diabetes was induced in female rats by a single intravenous injection of streptozotocin (STZ) one week prior to mating. Control females received no STZ. Rats were submitted to a moderate exercise (swimming program) at different time points: prior to pregnancy, from day 0 and day 7 to the end of pregnancy. The pregnancies were interrupted on gestational day 21. The uterine content was inspected and maternal blood samples collected for biochemical analysis. Data were compared using Student Newman Keuls test. Statistical significance was considered as $p<0.05$. Results: Control and diabetic rats exposed to swimming presented no glycemic alterations and their fetuses had a lower birth weight. Exercise in diabetic rats was significantly associated with increased high density lipoprotein (HDL)-cholesterol levels and a higher number of live fetuses, a decreased embryonic death rate, lower fetal weight, and decreased ossification sites ($p<0.05$). It did not alter the frequency of external and visceral anomalies, but it was associated with a significant increased number of skeletal anomalies. Conclusion: Maternal diabetes modified with a swimming program did result in altered maternal biochemical profiles, improved reproductive outcomes, and it was associated with intrauterine growth restriction as reflected by lower fetal weight and a decreased number of ossification sites.

Financial Support: FAPESP/BRAZIL (2005/02386-7)

Mild Diabetes Induced on Neonatal Period of Rats: Implications in Pregnancy Period

Bruna Dallaqua, Aline Bueno, Isabela L Iessi, Yuri K Sinzato, Ana Paula M Spada, Paula HO Lima, Marilza VC Rudge, Débora C Damasceno*

Gynecology, Obstetrics and Mastology Post Graduation Course, Department of Gynecology and Obstetrics, Botucatu Medical School, São Paulo State University (UNESP), Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Dallaqua B, Bueno A, Iessi IL, Sinzato YK, Spada APM, Lima PHO, Rudge MVC, Damasceno DC. Mild Diabetes Induced on Neonatal Period of Rats: Implications in Pregnancy Period. Annu Rev Biomed Sci 2010;12:A12. Objective: To validate a model of induction of mild diabetes in rats, which reproduce gestational diabetes in women, and that permit to characterize the consequences on pregnancy outcomes in these rats. Newborn rats (NB) were divided into two groups: non-diabetic (control) and diabetic (STZ). Mild diabetes was induced by streptozotocin (STZ-100 mg/kg) on day 1 of birth. The control group received only vehicle. STZ, adult rats that had glycemia between 120 and 300 mg/dL and control rats presenting glycemia inferior to 119 mg/dL were included in the experiment. In pregnancy, insulin and glucose tolerance tests were performed. At day 21 of pregnancy, rats were anesthetized and blood samples were obtained for insulin determination. Exploratory laparotomy was performed to remove the placenta and fetuses. NB were weighed and classified into small (SPA), appropriate (APA) and large (LPA) for pregnancy age. Placentas were processed for placental glycogen analysis. Statistical significance was considered as $p<0.05$. Normoglycemia was observed (~100 mg/dL) in the control rats. STZ rats showed higher glycemia on days 0 and 14 of pregnancy. The STZ group showed significant changes in insulin and the glucose tolerance tests. At the end of pregnancy, STZ rats showed a higher proportion of NB SPA and LPA, a reduced rate of NB APA and no changes in insulin and placental glycogen levels. This model is characterized by mild diabetes as confirmed by a glucose change in pregnancy, glucose intolerance and insulin resistance, and it resulted altered fetal development as reflected by intrauterine growth restriction.

Financial Support: FAPESP: 2006/03768-3

*** Correspondence**

Débora C Damasceno. Faculdade de Medicina de Botucatu, Departamento de Ginecologia e Obstetrícia. Distrito de Rubião Jr s/n. CEP: 18618000. Botucatu, SP, Brazil.

E-mail: damasceno@fmb.unesp.br

Effects of an Exercise Program (Strength and Aerobic Training) on Sarcopenia, Adiposity and Strength in Adults

Damiana T Pierine, Diego F Batista, Gabriela KF Castanho, Marina Nicola, Thomas FC Pesavento, Roberto C Burini

UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho" – Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pierine DT, Batista DF, Castanho GKF, Nicola M, Pesavento TFC, Burini RC. Effects Of Exercise Program (Strength And Aerobic) On Sarcopenia, Adiposity And Strength In Adults. Annu Rev Biomed Sci 2010;12:A13. Exercises stimulate muscle growth and strength, reduce body adiposity, and prevent non-transmissible chronic diseases. This study aimed at assessing the effects of exercise (strength and aerobic training) on sarcopenia, body and abdominal adiposity, and strength in adults. Fifty-eight adults (52.7±14.4yrs old) of both genders (8M, 50F) underwent exercise training (5 d/wk) including walking (40 min/d, 3 d/wk), resistance exercises (50 min/day, 2 d/wk) and stretching (30 min/d, 5d/wk). The anthropometric markers evaluated were muscle and fat mass (electrical bioimpedance) and abdominal circumference. Muscle strength was assessed by hand grip strength. All measurements were taken at baseline (M0), and after 10 weeks (M1). The results were analyzed by Student's t test (p0.05). After 10 weeks, there was a decrease in sarcopenia prevalence (M0=16.7; M1=12.9%). BMI (M0=31.9±6.0; M1=31.2±5.7kg/m²; p<0.000), body mass (M0=82.1±19.8; M1=80.5±19.5kg), abdominal circumference (M0=102.9±15.6; M1=100.7±15.5cm; p<0.000) and body fat (M0=39.8±8.3; M1=39.1±8.2%; p=0.01), along with an increase in muscle strength (M0=30.1±10.0; M1=31.9±11.2kg; p<0.000). In brief, only 10 wks of exercise was enough to significantly reduce sarcopenia and body adiposity, and to increase muscle strength.

Financial Support: CAPES, CNPq, FAPESP, FUNDAP

Alcohol Use among Students in Botucatu - SP: Prevalence and Risk Factors

Priscila L Pereira[1*], Maria CP Lima[2], Florence Kerr-Corrêa[2]

[1] Public Health Department, Botucatu Medical School, UNESP – São Paulo State University, SP, BRAZIL

[2] Neurology, Psychiatry and Psychology Department, Botucatu Medical Scholl, UNESP – São Paulo State University, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pereira PL, Lima MCP, Kerr-Corrêa F. Alcohol Use among Students in Botucatu - SP: Prevalence and Risk Factors. Annu Rev Biomed Sci 2010;12:A14. The aim of this study was to estimate the prevalence of alcohol use among students in elementary and high school in Botucatu, SP. During the years 2007/2008 a survey was conducted with a random sample of 1,606 students. Collected data included information on: socio-demographic characteristics, health and lifestyle variables, alcohol use and its consequences, family history and friends, use of other substances, sexuality and intimate relationships and violence/victimization. A wide range of instruments was used, including the Alcohol Use Disorders Identification Test - AUDIT to identify harmful use of alcohol. The results showed that, among elementary school students, 20.9% had experienced alcohol and 8.9% reported regular use. Among high school students, 28.7% had experienced alcohol and 44.5% reported regular drinking. Logistic regression analysis showed that the possible risk factors of alcohol use for elementary schoolers were smoking, having many friends who drink and smoke tobacco, reported aggressive behavior during the past year and older age. For high school students, risk factors included having used illegal drugs in the past year, smoking in the past month, having many friends who drink, having threatened / humiliated peers, positive family history of alcohol misuse and older age. Our findings show the necessity of clear policy guidance on alcohol use to students, as well as prevention programs.

Financial Support: FAPESP (2007/52371-1)

Correspondence:

Priscila L Pereira. Faculdade de Medicina de Botucatu, UNESP, Departamento de Neurologia, Psiquiatria e Psicologia. Distrito de Rubião Jr. CEP 18618-970. Botucatu, SP, Brazil.

Email: iampriscila@hotmail.com.

Effect of Exercise on Body Mass Index and Fitness in Children and Adolescents

Diego F Batista, Damiana T Pierine, Nailza Maestá

UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho" - Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Batista DF, Pierini DT, Maestá N. Effect Of Exercise On Body Mass Index And Fitness In Children And Adolescents. Annu Rev Biomed Sci 2010;12:A15. Sedentary lifestyle has significantly increased among children and adolescents. Physical activity positively affects both their immediate and long-term health. This study aimed at evaluating the effect of exercise on BMI, agility, flexibility, abdominal strength and back extensor strength in elementary and high school students of a private school in Botucatu-SP. Nineteen students, 12 boys and 7 girls aged 9.2±2.1 years underwent physical activities after school for 3 months (3d/w, 60 min/d). These activities included stretch (20 min/d) and aerobic training (40 min/d). Weight and height were measured to calculate BMI (CDC, 2000). Fitness was assessed by the following tests: speed (10-m Shuttle Run), abdominal strength (repetitions/4 min), back extensor strength (lifting of the trunk in prone position) and flexibility (sit and reach) (*Physical Fitness Test Reference Guide*, 2005). Statistical analysis was performed using Student's t-test. Two students (11%) were classified as normal, 4 as overweight (21%) and 13 as obese (68%). A significant decrease in BMI (M0= 23.5±1.6; M1=22.6±1.2 kg/m2; $p<0.05$), and a significant increase in agility (M0=14.9±1.5; M1=14.3±1.3 sec; $p<0.05$) and back extensor strength (M0=17.2±6.4; M1=25.9±7.9 cm; $p<0.05$) was observed in the obese, whereas no change was detected in normal and overweight students. There was no significant change in flexibility and abdominal strength. Regular recreational exercise improved BMI and physical fitness in children and adolescents, especially in the obese.

Financial Support: FIBs, UNIFAC, CEPRA

Blood Transfusion in a Teaching Hospital

Ana Paula Pancieri, Maria Virginia MFF Alves, Claudia HB Luppi

UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho" - Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pancieri AP, Alves MVMFF, Luppi CHB. Blood Transfusion in a Teaching Hospital. Annu Rev Biomed Sci 2010;12:A16. The nursing staff takes part in the process of blood transfusion from blood donor selection to the installation of the blood bag, monitoring complications that may arise during this procedure. The objective of this study was to know how and who performs blood transfusion in the clinical and surgical units of a teaching hospital. A test with multiple answers was especially developed for this study. During visits to the hospital's technical sessions, the nursing staff was invited to answer the test and sign the consent form to participate in this research. Respondents included 63 professionals working in 15 technical sessions. The frequency of blood transfusion performance was mostly reported as "a few times a week" and "difficult to achieve". The topic of blood transfusion was addressed during the training course of more than a half of the participants. There was some answer disagreement in among nurses working in different sessions. Since the institution's rules and routine are standardized, this is not acceptable to occur. It shows lack of rules or control upon the health care provided at different technical sessions. In conclusion, data collection was a hard task as it requiredhe cooperation of the staff members, who sometimes could not answer at the time of the researcher's visit to the section, making further visits necessary. Since the hospital in case is a teaching hospital, the professionals understood the importance of this research to improve the blood transfusion technique in a near future.

Financial support: PROEX

Host Family Psychosocial Experience in the Event of Death in the Bauru State Hospital: A Humanized Perspective

Rosemary FS Pinton[1], Priscila L Pereira[1,2*], Márcia VIMS Silva[1], Rosana RP Gimenes[1], Talita AL Coltri[1], Juliane R Lobregat[1], Deborah AD Guizine[1], Ana Claudia F Teixeira[1], Ana Paula Viotto[1], Fabiana SRG Silva[1], Bruna BA Meira[1], Andréia B Lima[1], Chahida J Obeidi[1], Maria AF Troijo[1], Maria C Rodelli[1], Cátia CX Mazon[1]

[1] Bauru State Hospital, Bauru, SP, BRAZIL
[2] Public Health Department, Botucatu Medical School, UNESP – São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pinton RFS, Pereira PL, Silva MVIMD, Gimenes RRPG, Coltri TAL, Lobregat JR, Guizine DG, Teixeira ANF, Viotto AP, Silva FSR, Meira BBA,Lima AB, Obeidi CJ, Troijo MAF, Rodelli MC, Mazon CCX. Host Family Psychosocial Experience in the Event of Death in the Bauru State Hospital: A Humanized Perspective. Annu Rev Biomed Sci 2010;12:A17. This study analyzes the performance of the professionals providing psychosocial care to the families of deceased patients. The Bauru State Hospital - Teacher Arnaldo Prado Curvello- serves only patients of the Single Psychosocial Health Unit that is composed of psychologists and social workers who work 24 hours in the care of 100% of the deaths. In the occurrence of death during hospitalization, the inpatient unit communicates the Psychosocial Unit which is responsible for all the necessary documentation and makes the host family. In facing this new situation, the host provides social support and psychological care for the reactions, as recommended by the National Policy of Humanization (PNHAH: 2001) ensuring the User the right to citizenship. Observed during the execution of this work, the importance of this activity to share with family members the overflow of emotions to the news and to ensure a friendly for such events. We also noted that the funeral arrangements and documentation are specific aspects in the experience of death, for the families present themselves unprepared and need appropriate guidance to deal with this reality. It was possible to see through verbal reports of their own families to the difference in care provided with the impact of losing a loved one, as well as reducing feelings of distress and disorientation. Thus, we believe that these actions coupled with the realization of the right of family participation in the process of hospitalization of the patient approaches a more humanized in the hospital.

*** Correspondence**

Priscila L Pereira. Faculdade de Medicina de Botucatu, UNESP, Departamento de Saúde Coletiva. Distrito de Rubião Jr. CEP 18618970. Botucatu, SP, Brazil.

Email: iampriscila@hotmail.com

Determination of Antimicrobial Resistance and Detection of *mecA* Gene from *Staphylococcus* spp. Isolated from Patients of Dermatology of Botucatu Medical School (BMS)

Mariana F Bonesso[1,2], Silvio A Marques[2], Maria de Lourdes RS Cunha[1*]

[1]Microbiology and Immunology Department, Bioscience Institute, UNESP - São Paulo State University; Botucatu, SP, BRAZIL
[2]Dermatology and Radiotherapy Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Bonesso MF, Marques SA, Cunha MLRS. Determination of Antimicrobial Resistance and Detection of mecA Gene from Staphylococcus spp. Isolated from Dermatology Patients of Botucatu Medical School (BMS). Annu Rev Biomed Sci 2010;12:A18. Community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has emerged since 1990 and has caused infections in people without risk factors. These strains carry staphylococcal cassette chromosome (SCC*mec*) type IV harboring the *mecA* gene that codes for the methicillin resistance. The aim of this study was to evaluate the antimicrobial resistance and to detect the *mecA* gene in *S. aureus* and coagulase-negative Staphylococci (CoNS) samples isolated from patients from BMS Dermatological-admission room (BMS-DAR). *SCCmec* typing was also carried out for *S. aureus* samples. A total of 101 samples were collected and among the 56 isolated 34 were identified as *S. aureus* and 22 as CoNS. Among the 34 *S. aureus* isolated, ten (29%) harbored the *mecA* gene and only three (30%) were oxacillin-resistant by the disc-diffusion agar method tested with an oxacillin and/or cefoxitin disc. Of these nine (90%) were penicillin-resistant. Regarding the CoNS isolates, seven of 22 samples tested (32%) carried the *mecA* gene, four (57%) showed oxacillin and/or cefoxitin phenotypic resistance, six (86%) were penicillin-resistant. Five samples of MRSA were typed by multiplex PCR for characterization of *SCCmec*, resulting in two harboring cassette type IV (20%) characteristic of CA-MRSA strains and three carrying cassette type II (30%) of nosocomial origin. Our study suggests that MRSA and methicillin-resistant CoNS (MRCoNS) are present in the community and that both community and nosocomial *SCCmec* types are common among patients observed from BMS-DAR. This may constitute an important source of infection with treatment difficulties and evolve into dissemination of resistant strains in the community.

[*] **Correspondence**
Maria de Lourdes RS Cunha. Departamento de Microbiologia e Imunologia, Instituto de Biociências, UNESP – Universidade Estadual de São Paulo, Brasil. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brasil.

Use of Pentoxifylline, Nicotinamide/Allopurinol and Methylprednisolone and their Effects on Proptosis and Inflammatory Markers in Patients with Graves' Ophthalmopathy (GO)

Leonardo PS Fernandes[1], Carlos R Padovani[2], Célia R Nogueira[1], Gláucia MFS Mazeto[1*]

[1] Clinical Medicine Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu; SP, BRAZIL

[2] Biostatistics Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu; SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Fernandes LPS, CR Padovani, Nogueira CR, Mazeto GMFS. Use of Pentoxifylline, Nicotinamide/ Allopurinol and Methylprednisolone and their Effects on Proptosis and Inflammatory Markers in Patients whit Graves' Ophthalmopathy (GO). Annu Rev Biomed Sci 2010;12:A19. Graves' ophthalmopathy(GO) is a therapeutic challenge and treatment outcome is often not satisfactory. Treatment includes glucocorticoids, orbital radiotherapy and surgery for decompression, all of them presenting some degree of side effects and considerable costs. As cytokines play an important role in the pathogenesis of the disease, cytokine antagonists and antioxidants might constitute a tool for management of GO. Treatments under investigation include non expensive and virtually free of side effects such as pentoxifylline (inhibits glycosaminoglycan synthesis, reduces interleukins, TNF- á and IFN-á expression in orbital fibroblasts), nicotinamide/ allopurinol (blocks proliferation of orbital fibroblasts and cytokine-induced expression MHC II antigens and sICAM-1). Objectives: Evaluate the response to treatment with oral pentoxifylline and nicotinamide / allopurinol , compared with standard therapy with intravenous methylprednisolone and its effects on cytokines levels. Methods: Prospective study involving 16 patients, with moderate or moderately severe GO with Clinical Activity Score (CAS) e" 3 divided into three groups: GI- oral pentoxifylline; GII- oral nicotinamide / allopurinol and GIII- intravenous pulse of methylprednisolone. They all had similar levels of TSH, FT4, TRAb and TPOAb. Groups were compared on proptosis by measurement on orbital CT scan, CAS , TNF-á and IL-6 levels before, during and after treatments (basal time, 3 and 6 months) Results: Improvement on proptosis, levels of TNF-á and IL-6 was similar in the three groups. CAS showed better improvement in GII than standard methylprednisolone therapy. Conclusion: Drugs acting on inflammatory cascade that occur in orbital tissues could be a promise in GO treatment.

Financial Support: FAPESP (2003/03651-0)

* **Correspondence**

Gláucia MFS Mazetto. UNESP, Departamento de Clínica Médica. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail:gmazeto@fmb.unesp.br

Nursing Activities Score: Outcome of Patients with a Heavy Workload

Elaine M Oliveira, Meire C Novelli e Castro, Wilza C Spiri, Magda CQ Dell'acqua

UNESP - Universidade Estadual Paulista "Júlio de Mesquita Filho" - Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Oliveira EM, Castro MCN, Spiri WC, Dell'acqua MCQ. Nursing Activities Score: Outcome of Patients with a Heavy Workload. Annu Rev Biomed Sci 2010;12:A20. Introduction: NAS is an instrument that quantifies and grades nursing workload during patient care around the clock. NAS measures actual nursing workload in ICUs by taking into account the largest set of activities developed by the nursing team, making it possible to diagnose patients' care needs. The score may vary from 0 to 100 percent or more, which is the percentage of time spent by the nurse providing direct nursing care. Objective: To analyze the outcome of patients with a heavy workload in ICUs for adults. Methods: This quantitative study used descriptive statistics. In July 2009, an assessment of patients presenting a heavy nursing workload on any hospitalization day was performed with NAS quantification over 80. Thus, one of them was selected. A computerized instrument that quantifies daily NAS in the ICU for adults was used. Results: Of 25 patients with a workload heavier than 80, 12 died, and 13 were discharged from the ICU. Of these 13 patients, 12 showed a high NAS at hospitalization. Of the 12 patients who died, 10 showed high NAS upon leaving. Conclusion: High nursing workload is related to the needs at the time of hospitalization or to when patients develop to death due to care management requirements.

In Utero Protein Restriction and its Effects on Puberty Onset in Male and Female Rats

Fabíola C Toledo[1], Flávia PC Pedrosa[2], Juliana E Perobelli[1], Marina T Guerra[1], Wilma G Kempinas[2]

[1] Graduate Program in Cell and Structural Biology, Institute of Biology, State University of Campinas, Campinas, SP, BRAZIL

[2] Morphology Department, Biosciences Institute, UNESP São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Toledo FC, Pedrosa FPC, Perobelli JE, Guerra MT, Kempinas WG. In Utero Protein Restriction and its Effects on Puberty Onset of Male and Female Rats. Annu Rev Biomed Sci 2010;12:A21. The aim of the present work was to investigate the possible effect of *in utero* protein malnutrition on initial sexual development of male and female rats. Wistar pregnant rats were divided into two experimental groups: one treated with standard chow (SC, n=8, 17% protein) and the other treated with hypoprotein chow (HC, n=10, .6% protein) throughout gestation. On postnatal day 1 (PND1) pups were weighed and the anogenital distance was measured with a pachymeter. In male pups, the day of testicular descent (starting on PND15) and preputial separation (starting on PND30), indicative of the onset of puberty, were investigated. In females pups, the day of vaginal opening, indicative of the onset of puberty, was investigated starting on PND30 and, after the vaginal opening, the occurrence of first estrus was determined. Statistical analyses were performed using Student´s t test ($p<0.05$). The body weight at birth was statistically lower in the HC than in the SC group ($p<0.001$) in both sexes. The anogenital distance in male pups were similar between the two groups, but in female pups, it was higher in the HC than in the SC group. *In utero* protein restriction delayed the age (days) of testicular descent and preputial separation in the male offspring and delayed the age (days) of vaginal opening and first estrus in female offspring. The results showed that *in utero* protein restriction impaired the initial sexual development of male and female rats.

Financial support: FAPESP (2007/57375-5)

* **Correspondence**

Wilma G Kempinas. Instituto de Biociências de Botucatu, UNESP, Departamento de Morfologia. Distrito de Rubião Junior. CEP 18618-000. Botucatu, SP, Brazil.

Email: kempinas@ibb.unesp.br.

Antibacterial Action and Synergism of Ethanolic Extract of Propolis and Medicinal Plants Essential Oils

Isabela S Probst, Lidiane N Barbosa, Nathalia CC Silva, Ary Fernandes-Jr

Instituto de Biociências, UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Probst IS, Barbosa LN, Silva NCC, Fernandes-Jr A. Antibacterial Action and Synergism of Ethanolic Extract of Propolis and Medicinal Plants Essential Oils. Annu Rev Biomed Sci 2010;12:A22. Bacterial resistance and the worsening of infectious disease are caused, in part, by the easy access and indiscriminate use of antimicrobial drugs. The use of products of natural origin used in popular medicine may be an alternative. This study aimed at evaluating the effects of ethanolic extracts of propolis (EEP) and cinnamon (*Cinnamomum zeylanicum*), clove (*Caryophyllus aromaticus)*, ginger (*Zingiber officinale*) and peppermint (*Mentha piperita*) in terms of antimicrobial activity against 15 *Staphylococcus aureus* and 15 *Escherichia coli* strains. We determined the Minimal Inhibitory Concentration (MIC) and calculated the $MIC_{90\%}$, for the methodology of the dilution of the natural products in Agar, and we determined potential synergisms between compounds. Ratios of ¼ and ½ of MIC_{90}% were used to investigate the synergism between EEP+oils. Survival curves were determined for each combination; ¼ of MIC_{90}% were used to evaluate the activity of cinnamon oil+others EO's. The highest activity of a single substance was observed for cinnamon oil, with a MIC_{90}% of about 1.15 mg/mL against *S.aureus*, and 0.99 mg/mL against *E.coli*. Against *S.aureus*, the antimicrobial synergism was better with the propolis+ginger oil mixture,. The mixture of EEP+peppermint oil was more effective against *E.coli*, whereas EEP+cinnamon oil showed the best interaction using ½ of MIC_{90}%. The synergism between cinnamon oil+the others EO's against both bacteria (employing ¼ of MIC_{90}%) was better when cinnamon and ginger were combined.

Financial Support: FAPESP (2008/55727-4)

Maternal Mental Health and Infantile Development

Débora G Ribeiro[1], Gimol B Perosa[2*]

[1]Public Health Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2] Neurology and Psychiatry Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Ribeiro DG, Perosa GB. Maternal Mental Health and Infantile Development. Annu Rev Biomed Sci 2010;12:A23. Studies conducted in several countries have shown the importance of maternal mental health for child development. The objective of this study was to associate the maternal mental health with infantile development in one-year-old children. Thirty-two mother-child pairs attending a primary healthcare center in the municipal district were selected. The self reporting questionnaire (SRQ -20) was used for the detection of common mental disorders (CMD) in the mothers, and the DENVER II test for the evaluation of children's psychomotor development. Mothers were classified as having or not CMD and the children as normal or with global development risk. Child development was also categorized into 4 subclasses: gross and fine motor adaptive development, language development and personal-social development. The association between child development and maternal mental health was evaluated by the Chi-square test ($p < 0.05$). Even though 56% of the mothers showed indications of CMD and 56% of the children showed development risk, there was no significant association among variables. No alteration in gross motor development was observed independently from the mother's mental health status. Children of CMD mothers presented a higher frequency of delayed language and personal-social development compared to children of mothers without CMD. Although CMD was detected in many of the mothers evaluated, no association between maternal mental health and one-year child development. Larger samples may allow weaving better considerations about the influence of maternal mental health over child language and personal-social development.

Financial Support: CAPES

* **Correspondence**
Gimol B Perosa. Faculdade de Medicina de Botucatu, UNESP, Departamento Neurologia e Psiquiatria. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: gimol@fmb.unesp.br

Myostatin and Follistatin Expression in Skeletal Muscles of Rats with Chronic Heart Failure

Daniele M Guizoni[1], Aline RR Lima[1], Paula F Martinez[1], Katashi Okoshi[1], Leonardo AM Zornoff[1], Dijon HS Campos[1], Silvio A Oliveira Júnior[1], Camila Bonomo[1], Marcelo DM Cezar[1], Ricardo L Damatto[1], Maeli Dal Pai-Silva[2], Marina P Okoshi[1*]

[1]Internal Medicine Department, Botucatu Medical School, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

[2]Morphology Department, Botucatu Bioscience Institute, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Guizoni DM, Lima ARR, Martinez PF, Okoshi K, Zornoff LAM, Campos DHS, Oliveira-Júnior SA, Bonomo C, Cezar MDM, Damatto RL, Dal Pai-Silva M, Okoshi MP. Myostatin and Follistatin Expression in Skeletal Muscles of Rats with Chronic Heart Failure. Annu Rev Biomed Sci 2010;12:A24. Skeletal muscle abnormalities can contribute to decreased exercise capacity and fatigue in heart failure (HF). Although muscle atrophy is a common alteration in HF, the mechanisms responsible for muscle mass reduction are not clear. Myostatin, a member of the TGF-â family, regulates muscle growth and mass. Studies have shown a negative correlation between myostatin expression and muscle mass. The aim of this study was to evaluate myostatin expression in skeletal muscles of rats with chronic HF. As myostatin gene expression can be modulated by follistatin, we also evaluated its expression. HF was induced by myocardial infarction (MI, n=8); results were compared with a Sham-operated group (n=8). Cardiac structure and ventricular function were assessed by transthoracic echocardiogram. Myostatin and follistatin gene expression was analyzed by real-time PCR and protein levels by Western blotting in the soleus and gastrocnemius muscles; fiber trophism was evaluated by morphometric analysis in HE stained sections. Left ventricular dilation and dysfunction were observed in MI compared to the Sham group. In the soleus muscle, cross-sectional area (Sham 3,572±378; MI 2,982±323 ìm^2; p=0.006) and follistatin protein expression (Sham 1.00±0.36; MI 0.18±0.06 arbitrary units; p=0.03) were lower in MI and there was a trend for follistatin gene expression to be lower in MI group (p=0.085). There was no change in myostatin expression. In the gastrocnemius, all parameters were similar between groups. In conclusion, our data show that, during chronic heart failure, decreased skeletal muscle trophism is combined with unchanged myostatin and reduced follistatin expression.

Financial support: FAPESP, CNPq and Fundunesp

***Correspondence**

Marina P Okoshi. Faculdade de Medicina de Botucatu, UNESP, Departamento de Clínica Médica. Distrito de Rubião Jr. CEP. 18618000. Botucatu, SP, Brazil.

E-mail: mpoliti@fmb.unesp.br

Impact of Maternal Protein Restriction at Different Moments of Gestation on Offspring Birth Weight, Anogenital Distance and Body Length

Ana Luisa C Gaspar, Fabíola C Toledo, Wilma G Kempinas*

Morphology Department, Bioscience Institute, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Gaspar ALC, Toledo FC, Kempinas WG. Impact of Maternal Protein Restriction at Different Moments of Gestation on Offspring Birth Weight, Anogenital Distance and Body Length. Annu Rev Biomed Sci 2010;12:A25. Previous studies indicate that maternal protein deficiency in rats during pregnancy reduced pups birth weight and promoted several metabolic changes. Thus, this study aimed to evaluate the effects of maternal protein restriction at different moments of gestation on birth weight, ano-genital distance (AGD) and body length in the offspring of rats. Pregnant female *Wistar* rats were divided into five experimental groups (n=7/group): 1) Control, 2) Gestational (protein restricted from gestational day 0 (GD0) to GD21, 3) Pre-implantation (protein restricted from GD0 to GD5), 4) Embryonic (protein restricted from GD6 to GD15 and 5) Fetal (protein restricted from GD16 to GD21). Pregnant mothers in the control and restricted groups were fed normoproteic (protein 17%) and hypoproteic ration (protein 6%), respectively, according to the restriction period. Ration and water were provided *ad libitum*. The post-natal day 0 (PND0) was considered as the birth day. Measurements were recorded on PND1. The results showed that pups in the Gestational (5.5±0.9, $p<0.001$) and Fetal (5.7±1.2, $p<0.001$) groups were significantly lighter whereas those in the Pre-implantation (7.6±1.0, $p<0.01$) group were significantly heavier than Controls (6.5±0.8). Body length data revealed that pups in the Pre-implantation group (5.1±0.4, $p<0.05$) were significantly larger, while those in the Gestational (4.6±0.4, $p<0.001$) and Fetal (4.8±0.4, $p<0.01$) groups were smaller, in comparison with the Control group (5.0±0.3). There were no significant differences in AGD among the Control and Restricted groups. In conclusion, the gestational moment at which mothers are submitted to protein restriction may differently influence the programming of offspring intrauterine development.

Financial support: CAPES

Diabetes Mellitus Worsens Cardiac Remodeling in Aged Spontaneously Hypertensive Rats: an *in Vivo* and *in Vitro* Study

Camila M Rosa[1*], Natasha P Xavier[1], Dijon HS Campos[1], Marcelo DM Cezar[1], Paula F Martinez[1], Louise L Rodrigues[1], Ana Angélica H Fernandes[2], Antonio C Cicogna[1], Camila Gimenes[1], Ariane HR Takamoto[1], Marina P Okoshi[1], Katashi Okoshi[1]

[1]Department of Internal Medicine, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2] Department of Chemistry and Biochemistry, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Rosa CM, Xavier NP, Campos DHS, Cezar MDM, Martinez PF, Rodrigues LL, Fernandes AAH, Cicogna AC, Gimenes C, Takamoto AHR, Okoshi MP, Okoshi K Diabetes Mellitus Worsens the Cardiac Remodeling of Aged Spontaneously Hypertensive Rats: Study in Vivo and in Vitro. Annu Rev Biomed Sci 2010;12:A26.
The association of diabetes mellitus (DM) and systemic arterial hypertension induces greater cardiac structural and functional damages than each condition alone. However, there are few studies examining this association, especially in aged rats. The purpose of this study was to analyze the influence of DM on left ventricular and atrial remodeling in senescent hypertensive rats (SHR). Male SHR at 18 months of age were divided into two groups: control (CTL, n=15) and diabetic (DM, n=15). DM was induced by streptozotocin (40 mg/kg, i.p.). Nine weeks after DM induction, the animals underwent echocardiography and myocardial functional study in left ventricular (LV) isolated papillary muscle. Groups were compared by Student's *t* test ($p<0.05$). The DM group showed increased LV (CTL, 24.6±3.18; DM, 30.6±5.34 mm/kg; $p<0.05$) and left atrial (CTL, 21.5±3.72; DM, 26.3±5.82 mm/kg; $p<0.05$) diameters normalized to body weight and reduction in LV relative wall thickness (CTL, 0.44±0.070; DM, 0.40±0.047; $p<0.05$). The indexes of *in vivo* LV systolic function (fractional shortening: CTL, 48.6±7.9; DM, 40.0±8.6 %; $p<0.05$; shortening velocity: CTL, 31.8±6.70; DM, 26.4±5.93 mm/s; $p<0.05$) and *in vitro* myocardial contractile function (developed tension: CTL, 5.38±2.76; DM, 3.56±1.82 g/mm^2; $p<0.05$; positive derivative of tension: CTL, 43.2±22.5; DM, 25.7±15.4 g/mm^2/s; $p<0.05$; time to peak of developed tension: CTL, 236±30; DM, 264±24 ms; $p<0.05$) were depressed in the DM group. DM did not cause alteration in diastolic function. Conclusions: diabetes mellitus causes dilation of the left cardiac chambers and impairs LV contractile function in senescent spontaneously hypertensive rats, both *in vivo* and *in vitro*.

Financial Support: Capes, CNPq.

***Correspondence:**

Camila M Rosa. Faculdade de Medicina de Botucatu, UNESP, Departamento de Clínica Médica. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: camilamrosa@hotmail.com.

Incidence of Voice Disorders in Schoolchildren

Elaine LM Tavares[1], Roberto B Lábio[1], Regina HG Martins[2]

[1]Pós-graduação em Bases Gerais de Cirurgia, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2]Otolaryngology and Surgery Head and Neck Department, Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Tavares ELM, Lábio RB, Martins RHG. Incidence of Voice Disorders in Schoolchildren. Annu Rev Biomed Sci 2010;12:A27. Introduction: It is estimated that 9% of children present dysphonia during infancy (Hirschberg et al., 1995), compromising social and educational aspects. The most prevalent laryngeal lesion in childhood is vocal nodules, responsible for 38-78% of the cases (Wetmore, 2005). Voice disorders in children are not evident to the parents. Purpose: to evaluate voice characteristics in children aged 4-12 years in order to determine the incidence of voice disorders among them. Methods: 2,000 questionnaires were distributed in some schools of Botucatu, of which only 822 have returned so far. These children underwent vocal evaluation by a speech pathologist (GRBAS scale) and those showing abnormalities were submitted to videolaryngoscopy. Results: 822 children were evaluated (389 girls and 433 boys). Vocal quality changes were detected in 187. Of these, 149 underwent videolaryngoscopy that revealed normal findings (n-77), vocal nodules (n-28), vocal fold inflammation and edema (n-10), and other less frequent alterations. Conclusion: Vocal symptoms were reported by 14.9% of the children. Vocal quality alterations were found in 22.7% of the children. In 8.75%, videolaryngoscopy detected larynx alterations with prevalence of vocal nodules. The rates indicated in this study corroborate those reported in the literature.

Financial support: CAPES

Can Urea Nitrogen Appearance (UNA) Be a Mortality Marker in Acute Kidney Injury (AKI)?

Milene PR Pinto*, Marina N Berbel, André L Balbi, Daniela Ponce

Department of Internal Medicine, Botucatu School of Medicine, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pinto MPR, Berbel MN, Balbi AL, Ponce D. Can Urea Nitrogen Appearance (UNA) Be a Mortality Marker in Acute Kidney Injury (AKI)? Annu Rev Biomed Sci 2010;12:A28. Objective: To evaluate the clinical characteristics and development of patients with AKI due to Acute Tubular Necrosis according to UNA values. Methods: Prospective cohort performed at a tertiary university hospital in which 153 patients with AKI were followed for 15 months. The patients were divided into 3 groups, according to UNA values (g of nitrogen) on the day of the first nephrological evaluation: G1= < 5; G2= 5 to 10; G3: >10. AKI was classified according to AKIN criteria. Different statistical tests were used, and the data were expressed as means and standard deviation or medians. The significance level was of 5% ($p<0.05$). Results: G1 showed a lower percentage of male patients as compared to the others (48.3% x 62% x 75.3%; p=0.03). The groups were similar in relation to age (73 x 64 x 62; p=0.01), ATN-ISS (0.43 x 0.46 x 0.51; p=0.22), stage-1 AKIN (58.6% x 56.9% x 48.5%; p=0.4), stage-2 (17.2% x 12% x 9%; p=0.4), stage-3 (24.2% x 31.1% x 42.5%; p=0.4) and dialysis requirement (37.9% x 36.2% x 48.5%; p=0.34). In G3, a higher percentage of ICU patients (51.7% x 51.7% x 76.9%; p=0.04) and higher median PCR values (6.7 x 15.7 x 20; p=0.002) were observed. There was no difference in mortality between the groups (G1 = 37.9%, G2 = 31% and G3 = 36.7%; p= 0.75). Conclusion: The results in this study show a direct relation between higher UNA and PCR values. However, no association was observed was observed between UNA and mortality.

* **Correspondence**
Milene PR Pinto. Faculdade de Medicina de Botucatu, UNESP, Departamento de Clínica Médica. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: mileneperon@yahoo.com.br

Nursing Care to a Patient with *Penfigus vulgaris*: experience report

Giovana Budart[1], Jairo A Ayres[2], Marli TC Duarte[2]

[1] Multiprofessional Residency in Family Health, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL
[2] Department of Nursing,, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Budart G, Ayres JA, Duarte MTC. Nursing care to a patient with Penfigus vulgaris: experience report. Annu Rev Biomed Sci 2010;12:A29. Penfigus vulgaris is an autoimmune, chronic, and severe disease. It manifests in the form of vesicles or bubbles that affect the skin and mucosas. Considering that its peculiarities may influence the self-image and emotional balance of its carrier, understanding this process is necessary when planning effective nursing care. The purpose of this study was to report the experience of a graduate student in the care of a patient with this condition. The experience took place during the practical activities of the discipline Nursing in Transmissible Diseases, at the Dermatology Ward of a University Hospital located in the interior of São Paulo state. Taking into account the large number of difficulties in nursing care, systematized interactions were planned to recognize the patient's perception about the disease and hospitalization. The analysis of the interactions revealed a healthy life. The final diagnosis was made after wandering from healthcare center to healthcare center. Hospitalization gave hope of a solution for the problem, but also brought distance from the family, fear of the procedures involving needles, and moments of intense stress. The importance he gave to his religious faith and his trust in the healthcare team are worth of note. Thus, interactions allowed planning nursing care according to the actual needs of the individual, establishing goals and priorities which contributed for his recovery and return to society. His relationship with the whole healthcare team was also favored. The importance of this experience in professional-academic learning is herein stressed.

TNF-α in Pregnancies Complicated by Diabetes or Mild Hyperglycemia - Preliminary Results

Elaine LM Tavares[1], Roberto B Lábio[1], Regina HG Martins[2*]

[1]Programa de Pós-graduaçao em Bases Gerais de Cirurgia, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2]Otolaryngology and Surgery Head and Neck Department, Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Tavares ELM, Lábio RB, Martins RHG. TNF-á in Pregnancies Complicated by Diabetes or Mild Hyperglycemia – Preliminary Results. Annu Rev Biomed Sci 2010;12:A30. TNF-α is a mediator of insulin resisactivation of the insulin receptor substrate 1 (IRS-1), thereby inhibiting the insulin-signaling pathway. Our aim was to compare the plasma levels of TNF-α among groups of non-diabetic women and women presenting with diabetes, prior or during pregnancy, or mild hyperglycemia with a maximum gestational age of entry into the treatment protocol of 30 weeks . Diabetes and mild hyperglycemia were diagnosed by TTG100g, applied in parallel with a glucose profile (GP), between 24 and 28 weeks. According to the test results, patients were classified into three groups: 1) normal GTT-100g and PG (ND, n = 12), 2) normal GTT-100g and altered GP (MH, n = 8), 3) altered TTG-100g, prior or during pregnancy, and altered GP (D, n = 19). Blood samples for TNF-α assay were collected during the 36th week of pregnancy before labor. Statistical significance was considered as 5%. Although there was a tendency towards increased TNF-α plasma concentrations in the group D, there was no statistical difference between groups (ND=4.37+/-4.50pg/mL; MH=2.35+/-2.03pg/mL; D=8.19+/-10.00pg/mL). This result may be explained by the small sample size and the inclusion of some type 1 diabetic women in group D. In conclusion, this work should be continued, including larger number of patients suitable for comparative analysis among groups presenting type 1, 2 or gestational diabetes and mild hyperglycemia.

*Financial Support: FAPESP (2007/00771-6)

Evaluation of Glucose Absorption Percentage in Patients with Acute Kidney Injury (AKI) Submitted to Continuous Automated Peritoneal Dialysis (APD)

Marina N Berbel, Milene PR Pinto, Daniela Ponce, André L Balbi

Department of Internal Medicine, Botucatu School of Medicine, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Berbel MN, Pinto MPR, Ponce D, Balbi AL. Evaluation of Glucose Absorption Percentage in Patients with Acute Kidney Injury (AKI) Submitted to Continuous Automated Peritoneal Dialysis (APD). Annu Rev Biomed Sci 2010;12:A31. Objective: to evaluate glucose absorption percentage in patients with AKI undergoing APD. Methods: Prospective study performed at a tertiary university hospital evaluating patients with AKI due to Acute Tubular Necrosis who require dialysis. All patients were submitted to APD. Three dialysate samples were collected every 8 hours, in each 24-hour session, for glucose absorption quantification. The difference between the total amount of prescribed and drained glucose in the dialysate and ultrafiltrate was considered to be absorbed glucose. Data were expressed as means and standard deviation or medians by using different statistical tests, and the significance level was 5% ($p<0.05$). Results: Fifteen patients with a mean age of 68 years were followed. Of these, 73.3% were males, and 66.6% were hospitalized in Intensive Care Units. The ATN-ISS means and PCR levels were respectively 0.47 ± 0.19 and 21.3 ± 14.4mg/dl. The median for the follow-up time was of 28 days, and that for APD was 7 days. The median for glucose absorption percentage was 51.1%. Death occurred in 33.3% of cases. Non-surviving patients showed, when compared to survivors, greater ATN-ISS (0.61 ± 0.11 x 0.39 ± 0.19; p=0.035) and similar PCR (18.5 ± 13.4 x 22.7 ± 15.3 mg/dl; p=0.61) and glucose absorption (48.2 ± 7.8 x 55.7 ± 9.1%; p=0.13) values. Conclusion: Patients with AKI submitted to APD show peritoneal glucose absorption rates of approximately 50%, without differences between survivors and non-survivors.

Oxidative Stress Level in Elderly Community Residents

Priscila L Moreira, Paulo JF Villas Boas, Ana Lúcia A Ferreira*

Department of Internal Medicine, Botucatu School of Medicine, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Moreira PL, Villas-Boas PJF, Ferreira ALA. Oxidative stress level in elderly community residents. Annu Rev Biomed Sci 2010;12:A32. Ageing is a dynamic and progressive process characterized by various organic changes. Studies have shown that antioxidant substances can attenuate oxidative processes common to the elderly population. Based on evidence suggesting the facts described above, this study evaluated oxidative stress by determining plasma levels of â-carotene, á-tocoferol and of the lipid peroxidation biomarker denominated malondialdehyde (MDA). The plasma levels of such antioxidant vitamins and of MDA were dosed by high-performance liquid chromatography (HPLC). Data were presented in median (percentiles 25 and 75), and the statistical tests used were the Mann-Whitney and Spearman's Rank tests. Differences were considered to be significant when $p < 0.05$. One hundred and twenty-six elderly individuals were evaluated. Of these, 54 were males and 72 were females aged 65 to 95 years [73 (68-79)]. Plasma concentrations of â-carotene and á-tocoferol were 0.09 µM/L (0.04 – 0.13) and 12.3 µM/L (9.4 – 15.8), respectively. Of the total number of individuals evaluated, 24 (19%) showed plasma levels below those recommended for â-carotene and 98 (77%) for á-tocoferol. Regarding MDA, 106 individuals (84.1%) showed figures above the ideal values recommended [0.7ìM/L (0.54 – 0.87)]. Association between low â-carotene and high MDA plasma levels ($p<0.05$) was observed. The results suggest that the study population shows a high oxidative stress level, which can be neutralized by â-carotene. It can also be suggested that the low á-tocoferol concentration identified in 77% of the study population may, at least in part, stem from the high level of lipid peroxidation observed.

*Financial support: FAPESP (Process: 07/57545-8)

Effects of Delayed Puberty on Reproductive Organ Weights, Sperm Motility and Morphology in Adult Male Rats

Denise S Silva[1], Juliana E Perobelli[2], Fabíola C Toledo[2], Wilma G Kempinas[1*]

[1] Morphology Department, Institute of Biociences, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

[2] Graduate Program in Cell and Structural Biology, Institute of Biology, State University of Campinas, Campinas, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Silva DS, Perobelli JE, Toledo FC, Kempinas, WG. Effects of Delayed Puberty on Reproductive Organ Weights, Sperm Motility and Morphology in Adult Male Rats. Annu Rev Biomed Sci 2010;12:A33. Currently, the exposure to environmental contaminants is considered one of the factors responsible for alterations in child development, resulting in pubertal precocity or delay. Many chemical compounds with domestic, industrial and agricultural use, known as endocrine disruptors, have shown hormonal activity. The aim of this study was to investigate whether a delay in puberty installation (represented as delay in prepucial separation) affects reproductive parameters in sexually mature rats. Pregnant Wistar rats (n=11) were treated by gavage with 500mg/kg/day of dibutyl phthalate (DBP) from gestational day 12 to 21. The control group (n=11) received corn oil. On postnatal day 85 one pup per litter was sacrificed to determine testis and epididymis weights, sperm motility and morphology. Data were compared using Mann-Whitney or Student´s t test ($p<0.05$). Although the final body weight in both groups were similar, the relative weights of testis and epididymis of the treated group were statistically reduced compared with the control. In some treated animals malformations were found in the caput epididymis, as already reported in the literature after exposure to a high dose of DBP. Sperm motility was not altered after the treatment. On the other hand, there was a significant increase in the frequency of sperm with a reduced sperm head hook in the DPB-treated group. We conclude that sperm morphology is affected by the delay in puberty caused by a high dose of DBP *in utero*.

[*]**Correspondence**

Wilma G Kempinas. Department of Morphology, Institute of Bioscience, UNESP. Distrito de Rubião Jr s/n, CEP 18618-000 Botucatu, SP, Brazil. Phone/Fax number: 55 – (014) 3811-6264

E-mail: kempinas@ibb.unesp.br

Assessment of Reproductive Outcomes in Female Rats Exposed to Propionate Testosterone During Gestation

Marina T Guerra, Nilson A Carnietto-Jr, Wilma G Kempinas

Morphology Department, Bioscience Institute, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Guerra MT, Carnietto-Jr NA, Kempinas, WG. Assessment of Reproductive Outcomes in Female Rats Exposed to Propionate Testosterone During Gestation. Annu Rev Biomed Sci 2010;12:A34. The objective of this work was to evaluate the reproductive outcomes in pregnant female rats exposed to propionate testosterone (TP). Pregnant Wistar rats were allocated into two experimental groups: treated (n=9) that received TP,s.c., 0.2mg/kg/day, from gestational day (GD) 12 to DG20; and control group (n=9) that received corn oil (vehicle), under the same experimental conditions. On GD20, after the treatment, rats were killed by decapitation. After the uterus and ovaries were removed, the number of corpora lutea were examined by gross morphology, and the number of implantation sites, resorptions, live and dead fetuses, fetal and placental weights were recorded. From these results, the following were determined: gestation rate, implantation rate (efficiency of implantation), pre and post-implantation loss rates and sex ratio. The treatment with TP caused a decrease in fetuses and placental weights and increased the post-implantation loss rate. The results show that TP administered during GD12 to GD21 impaired the reproductive outcomes in rats.

Financial Support: FAPESP 09/00352-9

* **Correspondence**
Wilma G Kempinas. Instituto de Biociências de Botucatu, UNESP, Departmento de Morfologia. Distrito de Rubião Jr. CEP 18618-000. Botucatu, SP, Brazil.
E-mail: kempinas@ibb.unesp.br

Detection of Hepatitis C Virus (HCV) in Platelets of Non-infected patients after *in vitro* exposure to HCV

Juliana L Padovani[1], Sílvia M Corvino[1], Rejane MT Grotto[1], Jan F Drexler[2], Maria Inês MC Pardini[1]

[1] UNESP - São Paulo State University; Botucatu, SP, BRAZIL
[2] UFBA – Bahia State University; cidade estado BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Padovani JL, Corvino SM, Grotto RMT, Drexler JF, Pardini MIMC. Detection of Hepatitis C Virus (HCV) in Platelets of Non-infected patients after in vitro exposure to HCV. Annu Rev Biomed Sci 2010;12:A35.
Hepatitis is a chronic disease caused by the RNA virus Hepatitis C (VHC). This virus generally infects hepatic cells, but the HCV RNA has been found in platelets as well. The surface receptor for HCV in hepatocytes is a protein of the tetraspanin family (CD81) which is typically found in association with integrins. The entry mechanism of HCV in platelets remains unknown as platelets do not express CD81, but this receptor is also present in megakaryocytes. Platelets express polymorphic antigenic determinants on their surface called HPA. Some HPAs belong to the integrin transmembrane glycoprotein family. Previous studies have demonstrated an association between HPA-5b and HCV infection. The goal of this study was to determine the presence of HCV. Platelets were collected from peripheral blood from 50 blood donors with RT-PCR negative for the virus. These platelets were infected *in vitro* with HCV and incubated at 37°C for 16-48 hours. RNA was then extracted and used for RT-PCR in order to detect the presence of the virus. All platelets were positive for HCV RNA after incubation with the virus, demonstrating that the virus uses a platelet protein for its entry. These results suggest that platelet glycoproteins may be receptors for viral entry.

Vocal Analysis in Children between 4 and 12 Years With or Without Oral Breathing

Roberto B Lábio, Elaine LT Mendes, Regina HG Martins

UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Lábio RB, Tavares ELM, Martins RHG. Vocal Analysis in Children between 4 and 12 Years With or Without Oral Breathing. Annu Rev Biomed Sci 2010;12:A36. Introduction: Some authors have stressed the negative effects of oral breathing (especially due to enlarged tonsils) on voice quality. Objectives: To evaluate the vocal characteristics of children aged 4 to 12 years with or without oral breathing. Material and Methods: The children were divided into groups GI (n- 60, children without oral breathing) and GII (n-60, children with oral breathing) and distributed according to the following age groups: 4-6; 7-9; 10-12. The children were submitted to voice quality evaluation (GRBASI scale), vocal acoustic analysis (multi speech MDVP program), audiological evaluation and videolaringoscopy. Vocal parameters were evaluated during spontaneous speech, counting numbers and issuance of the vowel / a /. Results- GI and GII were consisted of 29 and 25 girls and 31 and 35 boys, respectively. In GII, the main causes of oral breathing were enlargement of the tonsils (n-40) and allergic rhinitis (n-28). Vocal symptoms were reported only by individuals in group GII (n-60). GII presented higher GRBASI scale values and lower fo acoustic analysis values. All GI children presented normal audiological and videolaryngoscopic exams. In GII children, laryngeal lesions were more frequently observed (edema (n-9), hyperemia (n-16) and vocal nodules (n-5)). Conclusions- oral breathing causes negative effects on voice quality determining higher GRBASI scale values, lower fo values and laryngeal lesions.

Financial support: CAPES

The Gly972Arg Polymorphism in the IRS-1 Gene and Diabetes: an Update

Rafael B Gelaleti, Jusciele B Moreli, Marcos JT Caetano, Marcelo B Casarri, Paula HO Lima, Marilza VC Rudge*

Gynecology and Obstetrics Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Gelaleti RB, Moreli JB, Caetano MJT, Casarri MB, Lima PHO, Rudge MVC. The Gly972Arg Polymorphism in the IRS-1 Gene and Diabetes: An Update. Annu Rev Biomed Sci 2010;12:A37. The gene for insulin receptor substrate 1 (IRS-1), encodes the protein IRS-1, which is expressed in many insulin-sensitive tissues. IRS-1 is very important in regulating the effects of insulin in the cell. The IRS-1 gene is highly polymorphic and these polymorphisms may impair the function of IRS-1. Therfore, they may be associated with insulin resistance, lipid disorders, gestational diabetes mellitus and diabetes mellitus type 2. The most prevalent polymorphism is the Gly-Arg substitution at codon 972 (Gly972Arg). The in-vitro expression of the mutant protein results in reduced stimulation of the activity of the PI3K and MAP kinase pathways and reduces the incorporation of thymidine. The objective of this study was to carry out a literature review of studies published in recent years about the Gly972Arg polymorphism of the IRS-1 gene and its impact on diabetes. Data were collected from the literature for the period 1993 to 2008 (15 years) in the database from the National Center of Biotechnology Information (NCBI - PUB-MED). For the search, we used the terms polymorphism in IRS-1 and diabetes. The survey found 38 articles. Of these, 21 (55%) were related to the polymorphism of interest. Of these 21, only 6 (28%) this polymorphism had no relationship with diabetes. Already in 15 (72%) the Gly972Arg polymorphism was associated with various forms of diabetes. Specifically, it has been associated with type 2 diabetes, gestational diabetes, obesity and insulin resistance.

***Correspondence**
Marilza VC Rudge. Faculdade de Medicina de Botucatu, UNESP, Departamento de Ginecologia e Obstetrícia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: marilzarudge@ig.com.br

Protective Effect of Brazilian Propolis on Chemically-Induced DNA Damage

Danielle C Almeida[1*], Rodrigo OA Lima[1], Maria C Marcucci[2], Daisy MF Salvadori[1]

[1] Pathology Department, Botucatu Medical School, São Paulo State University – UNESP, Botucatu, SP, BRAZIL

[2] Pharmacology Department, Bandeirantes University of São Paulo – UNIBAN, São Paulo, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Almeida DC, Alves de Lima RO, Marcucci MC, Salvadori DMF. Protective Effect of Brazilian Propolis on chemically-induced DNA damage. Annu Rev Biomed Sci 2010;12:A38. Propolis is a complex mixture of plant resin, bee wax, essential oils and pollen, with a highly complex and variable chemical composition, which is intimately related to the region visited by the honeybees. This resin has been used in folk medicine because of its antimicrobial, antiparasitic, antiviral, antiinflamatory, and antioxidant properties. This study was designed to evaluate the antigenotoxic effect of an aqueous extract of propolis (AEP – 12.5, 25, 50, 100 and 200 μg/ml) and two of its fractions (F4 and F5 – 25, 50 and 100 μg/ml) on Chinese Hamster Ovary (CHO) and Human Hepatoblastoma (HepG2) cell lines, using the comet assay. Chemicals with different mechanisms of mutagenicity (H_2O_2, 4NQO, MMS, and DEN) were used in 3 different treatment protocols (pre-, simultaneous and post-), in order to better understand propolis chemopreventive action. Our data showed that the whole extract (AEP) was capable of reducing DNA damage induced by the 3 mutagens only in the CHO cell line. The 2 fractions (F4 and F5) showed similar results, but the antigenotoxic activity was more effective when the mutagens H_2O_2 and 4NQO were used. Both fractions were also capable of decreasing the level of damage induced by DEN in HepG2 cells. In conclusion, our findings confirmed the preventive effect of propolis components against chemically-induced DNA damage.

by São Paulo State University ISSN 1806-8774

Financial Support: FAPESP (2007- 01736-0)

[*]**Correspondence**

Danielle C Almeida. Faculdade de Medicina de Botucatu – UNESP, Departamento de Patologia. Distrito de Rubião Junior, CEP 18618-000 - Botucatu, SP, Brazil.

E-mail: danitina_almeida@hotmail.com

Evaluation of the Resistance and Virulence Profiles of Samples of Staphylococcus aureus Isolated from the Bauru State Hospital

Marcus VP Rodrigues[1,2], Nathália B Teixeira[2], Camila SM Souza[2], Carlos MCB Fortaleza[1], Maria de Lourdes RS Cunha[2*]

[1] Tropical Diseases Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2] Microbiology and Immunology Department, Bioscience Institute, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pimenta-Rodrigues, M.V.; Teixeira, N.B.; Souza, C.S.M.; Fortaleza, C.M.C.B.; Cunha, M.L.R.S. Annu Rev Biomed Sci 2010;12:A39. The aim of this study was to analyze the virulence factors and resistance related to the acquisition of *Staphylococcus aureus* isolated from patients in a teaching hospital. We evaluated 424 samples of *S. aureus* isolated from various cultures of 123 patients admitted to the State Hospital Bauru - UNESP. The analysis of resistance and virulence was performed by *mecA* gene detection, staphylococcal cassette chromosome subtyping (SCC*mec*), and detection of enterotoxins A, B and C (*sea, seb* and *sec-1*); toxic shock syndrome toxin (*tst*); Panton Valentine Leukocidin (*LukPV*); alpha hemolysin (*hla*) and delta (*hld*); exfoliative toxins A, B and D (*eta, etb* and *etd*); and biofilm (*icaA* and *icaD*). Genotyping of these samples was performed only for the first positive sample from each patient in the period, resulting in the analysis of 212 samples. The analysis of the resistance showed that 63.2% were MRSA, and of these 77.6% carried SCC*mec* type III, 17.2% Type I, 3% Type IV and 2.2% Type II. The virulence factors were more frequent in the production of biofilm, hemolysins and enterotoxins. The determination of factors related to these bacteria, combined with the analysis of host risk factors for their acquisition, can optimize the course of action related to control, treatment and prevention of these infections.

Financial Support: FAPESP (2007/05394-6)

***Correspondence**

Maria de Lourdes RS Cunha. Instituto de Biociências de Botucatu, UNESP, Departamento de Microbiologia e Imunologia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: cunhamlr@ibb.unesp.br

Proposal of Physiological Verification of the Effects of Manual Thoracic Compression, Manual Hyper-Insuflation and Tracheal Aspiration in Patients Undergoing Mechanical Ventilation

Susiane O Klefens, Ernani J Zampier

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Klefens SO, Zampier EJ. Proposal of physiological verification of the effects of manual thoracic compression, manual hyper-insuflation and tracheal aspiration in patients undergoing mechanical ventilation. Annu Rev Biomed Sci 2010;12:A40. Many problems can arise in the long term because of a strengthness and fatigable diaphragm, such as respiratory insufficiency, secretion accumulation and mucus retention, making intervention important every time this muscle shows this dysfunctional status. When strength is not recovered, fatigue may follow. Respiratory physical therapy acts on the treatment of lung diseases and could be used in critical patients for bronchial hygiene and pulmonary reexpansion in the ICU. The bronchial hygiene technique promotes airway permeability, and does not leave the bronchus full of secretions. The objective of this research is to assess the effects of respiratory physical therapy at mechanical ventilation in adult ICU patients by evaluating heart rate, O_2 saturation, blood pressure, current volume, minute volume and O_2 inspired fraction, after physical therapeutical maneuvers. The patients will be submitted to manual thoracic compression, tracheal aspiration and manual hyper-insufflation. Data will be collected on the monitors and ventilators, before, immediately after and 30 minutes after the technique application. The expected results are lower heart rate, and optimal levels for the other markers, which will allow avoiding long ICU stays by minimizing pulmonary complications.

Detection of the *mecA* Gene for Oxacillin Resistance in Samples of Coagulase-Negative Staphylococci from Patients at the Medical School of Botucatu Hospital

André Martins[1], Valeria C Pereira[2], Maria de Lourdes RS Cunha[2] *

[1] Tropical Diseases and Imaging Diagnosis Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL
[2] Microbiology and Immunology Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Martins A, Pereira VC, Cunha MLRS. Detection of the *mecA* gene for oxacillin resistance in samples of coagulase-negative staphylococci from patients at the Medical School of Botucatu Hospital. *Annu Rev Biomed Sci 2010;12:A41. Staphylococcus spp.* are responsible for several infections of importance to human health and are often associated with nosocomial infections. The primary drug of choice for treatment is oxacillin; however resistance to this drug, particularly in the group of coagulase-negative staphylococci (CNS), has become a major problem in recent years. The primary mechanism of resistance is the presence of the *mecA* gene. The aim of this study was to evaluate oxacillin resistance in CNS samples from the Medical School of Botucatu Hospital - UNESP (MSBH-UNESP) and distribution among the various wards. We identified 71 samples of CNS isolated from blood cultures between 2002 and 2006 and examined them for the presence of the *mecA* gene. A total of 48 samples of CNS (67.6%) were resistant to oxacillin, the species *S. epidermidis* being the most frequent (56; 78.9%). Most samples (42; 75%) were positive for the mecA gene. The Emergency Department had the highest prevalence of resistant strains (11; 22.9%), followed by the Intensive Care Unit - Emergency Medical Services (9;18.8%) and the Internal Medicine, Infectious and Parasitic Diseases and Intensive Care Unit Central wards (6 each; 12.5%). In other wards, the prevalence of *mecA* positive samples was 2%. The data show high prevalence of resistant strains in the MSBH-UNESP, emphasizing the importance of the rational application of antibiotics and good hospital practices to reduce the rates of resistance to oxacillin.

***Correspondence**
Maria de Lourdes RS Cunha. Instituto de Biociências de Botucatu, UNESP, Departamento de Microbiologia e Imunologia.. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: cunhamlr@ibb.unesp.br

Comparison of Identification Methods and Antimicrobial Sensitivity Profiles in *Staphylococcus* spp. Isolated from Patients with Urinary Tract Infection (UTI)

Adriano M Ferreira[1] , Alessandro L Mondelli[2] , Maria de Lourdes RS Cunha[3*]

[1] Tropical Diseases Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2] Internal Medicine Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[3] Microbiology and Immunology Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Ferreira AM, Cunha MLRS, Mondelli AL. Comparison of Identification Methods and Antimicrobial Sensitivity Profiles in Staphylococcus spp. Isolated from Patients with Urinary Tract Infection (UTI). Annu Rev Biomed Sci 2010;12:A42. Staphylococcus saprophyticus is the second most frequent agent of UTI acquired in the community, especially among sexually-active young women. This study aimed at assessing the sensitivity profile and the identification of *Staphylococcus* spp. in UTI patients. Staphylococci were identified by three different methods: novobiocin disk, Vitek I and simplified biochemical testing (reference method). Drug sensibility and oxacillin resistance were determined by disk diffusion and detection of the *mecA* gene. Of the 40 samples studied, 26 (65.0%) *S. saprophyticus* were identified by novobiocin disk and simplified testing, and 24 (60.0%) by Vitek I. *S. epidermidis* was detected by all three methods used; *S. aureus*, *S. haemolyticus* and *S. warneri* by Vitek I and simplified biochemical testing; and *S. auricularis* and *S. xylosus* by Vitek I alone. Of the 26 *S. saprophyticus*, 14 (53.8%) carried the *mecA* gene and none were resistant to cefoxitin. However, 25 (96.1%) were resistant to the oxacillin disk. Percentages of antimicrobial sensitivity were as follows: oxacillin 25%, penicillin G 30%, trimethoprim-sulfamethoxazole 82.5%, cefoxitin 87.5%, norfloxacin 87.5%, gentamicin 92.5%, cephalothin 97.5%, nitrofurantoin, linezolid and vancomycin 100%. The novobiocin disk still proved to be a good method for the identification of *S. saprophyticus* in urine samples. Although the cefoxitin disk and the detection of the *mecA* gene showed higher sensitivity in detecting oxacillin resistance in other *Staphylococcus* species, the oxacillin disk produced better results for *S. saprophyticus*, likely due to â-lactamase overproduction or the alteration of a PBP other than PBP2a.

[*] **Correspondence**

Maria de Lourdes RS Cunha. Instituto de Biociências, UNESP, Departamento de Microbiologia e Imunologia. Distrito de Rubião Jr. CEP. 18618-000. Botucatu, SP, Brazil.

E-mail: cunhamlr@ibb.unesp.br

Assessment in the Hemiplegic

Alison R Ferreira, Mônica O Gameiro*

Technical Section Rehabilitation, Botucatu Medical School, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Ferreira AR, Gameiro MO. Assessment in the Hemiplegic. Annu Rev Biomed Sci 2010;12:A43.
Introduction: Stroke (CVA) is a neurological disorder caused by abnormalities in the cerebral circulation. Functional assessment prior to rehabilitation is key to the elaboration of the sensory and motor characteristics that interfere with movement, muscle strength and coordination. Electromyography (EMG) records the electrical potential of muscles. Objective: To evaluate post - stroke muscle activity using surface electromyography at rest, and during isometric and isotonic contraction of the rectus femoris, tibialis anterior and gastrocnemius, as well as the degree of muscle strength and spasticity in the paretic and healthy hemisphere. Methods: Twelve patients of both sexes between 26 and 64 years were assessed. Evaluation included body mass index (BMI), spasticity, Ely test, muscle strength and EMG. Results: Mean BMI was 26.62 Kg/m^2 and was classified as overweight. Comparison of the Spearman's values for the joints revealed no statistical difference ($p > 0.05$). EMG-recorded strength in percentage did not significantly differ in the rectus femoris, gastrocnemius and tibialis anterior at all study times ($p > 0.05$). Conclusion: Muscle electromyographic activity showed no statistically significant differences at rest, and during isometric and isotonic contraction. The degree of muscle strength was partially compromised in the affected lower limb and appeared inversely proportional to spasticity.

* **Correspondence**

Mônica O Gameiro. Faculdade de Medicina de Botucatu, UNESP, Seção de Reabilitação. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: orsigam@fmb.unesp.br

The Effect of Exposure to a Western Diet in Uterus and During Lactation on the Susceptibility to Mammary Carcinogenesis in Sprague-Dawley Female Rats

Heloisa Ciol, Gisele Aparecida D Lopes, Luís F Barbisan

UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Ciol H, Lopes GAD, Barbisan LF. The Effect of Exposure to a Western Diet in Uterus and During Lactation on the Susceptibility to Mammary Carcinogenesis in Sprague-Dawley Female Rats. Annu Rev Biomed Sci 2010;12:A44. The objective of the study was to evaluate whether the exposure to a western diet during gestation and lactation would increase the susceptibility to mammary carcinogenesis induced by N-methyl-N-nitrosourea (MNU) in female Sprague-Dawley (SD) rats. SD pregnant females were randomized to either a semi-purified western-diet (high fat, low fiber and oligoelement contents) or a semi-purified *ad libitum* control diet, from the 12th gestational day (GD 12) to the 21st postnatal day (PND 21). At the end of the lactation period, female offsprings were separated from their mothers and divided into two groups according to their mother's initial randomization group. Ten of these female rats from each group were sacrificed while the remaining animals received a single 50mg/kg MNU i.p. dose on PND 23 and were fed the control diet *ad libitum* until sacrifice (four and ten weeks after MNU administration). Mammary abdominal and inguinal mammary chains, and mammary and liver neoplasms were removed and fixated in 10% buffered formalin for 24 hours. Histological mammary and tumor sections were stained with hematoxylin-eosin (HE); liver sections were exposed to imunohistochemical staining for glutathione-S-transferase placentary form (GST-P). SD female offsprings of mothers fed on the western diet developed a larger variety of mammary tumors than those in the control diet group ($P < 0.05$). The GST-P positive hepatocyte foci or mini-foci per hepatic area did not differ between groups. The results suggest that SD females exposed to western diet during gestation and lactation are more likely to develop mammary neoplasm than controls.

Financial Support : FAPESP

Ventilatory Threshold Assessment Using Heart Rate Variability during Incremental Shuttle Walk Test in Healthy Subjects

Marcos C Banov[1], Letícia CO Antunes[2], Victor Z Dourado[3*]

[1] Voluntary Researcher, Botucatu Medical School, UNESP- São Paulo State University, Botucatu, SP, BRAZIL

[2] Technical Section Rehabilitation, Botucatu Medical School, UNESP- São Paulo State, University, Botucatu, SP, BRAZIL

[3] Department of Health Sciences, Federal University of São Paulo, UNIFESP - São Paulo State, University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Banov MC, Antunes LCO, Dourados VZ. Ventilatory Threshold Assessment Using Heart Rate Variability during Incremental Shuttle Walk Test in Healthy Subjects. Annu Rev Biomed Sci 2010;12:A45. We examined whether the ventilatory threshold (VT) during an incremental shuttle walk test (ISWT) could be determined using heart rate variability (HRV) analysis. We also assessed linear regressions for the prediction of peak oxygen consumption (VO_{2peak}) and oxygen consumption at VT (VO_2VT) during ISWT. During ISWT, beat-to-beat R-R interval (POLAR-RS800) was determined and gas exchange analysis (k4b2-COSMED) was performed in 10 healthy subjects (31-83 years; 7 males). The ventilatory equivalent method was used to assess VT for respiratory components. To determine HRV threshold (HRVT), the standard deviation of the R-R intervals at each stage of exercise were graphically plotted against walking speed (WS). The average oxygen consumption at HRVT stage was recorded (VO_2HRVT). No significant differences were found between WS at VT and WS at HRVT (1.40 ± 0.27 vs. 1.41 ± 0.29 m/s). Linear regression showed a strong correlation between VO_2VT and VO_2HRVT ($r^2 = 0.896$). The Bland and Altman plot analysis revealed a strong agreement between VO_2VT and VO_2HRVT (-0.05 L/min: 95% confidence interval range -0.30 to 0.20). VO_{2peak} was adequately predicted by maximal WS ($r^2 = 0.889$) and by ISWT distance ($r^2 = 0.733$). VO_2VT was predicted by WS at HRVT ($r^2 = 0.545$). We can conclude that VT could be assessed during ISWT using a simple beat-to-beat heart rate monitor that is less expensive and complex than telemetric respiratory measurement devices. Thus, ISWT might be a useful tool for the assessment of exercise capacity and the prescription of walking programs to this population.

* Financial Support: FAPESP 2007/08673-3

Prevalence of Amputations of a Inferior Member in Relation to Sex and Age

Gylvana Teixeira, Kelly C Affonso, Vanessa C Novak

Physiotherapy Department,UNICENTRO - Universidade Estadual do Centro-Oeste, Guarapuava, PR, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Teixeira G, Affonso KC, Novak VC. Prevalence of Amputations of a Inferior Member in Relation to Sex and Age. Annu Rev Biomed Sci 2010;12:A46. The objective of this study was to verify whether sex and age are associated with the cause of amputations of a inferior member. Seventeen patients (76.5% males and 23.5% females) attending the UNICENTRO Physiotherapy Clinic School, located in the city of Guarapuava-Pr, between August and September 2009 were investigated after approval of the local Research Ethics Committee (protocol 04297/2009). Among males, average age was 50 years (± 14.7) and amputation was caused by vascular alterations in 53.83%, automobile accidents in 38.48%, and work accidents in 7.69% of the cases. Among females, average age 56 years (± 9.5) and the etiology of the amputation was vascular alterations in 75% and automobile accidents in 25% of the cases. Male average age was lower that of females because males are more likely to suffer traumas, which are frequent in young adults. Female amputations, in turn, were more frequently associated with vascular causes. Thus, amputation cause can be linked to age and sex. Further studies should be conducted as they might provide better knowledge to both the patient and the therapist in charge of rehabilitation.

Morphological Study of the Surface of the Tongue and Pharynx of Rats Exposed to Chronic Use of Tobacco and Alcohol

Sérgio LM Madeira[1], GO Semenzati[1], Alexandre T Fabro[2], Norimar Dias[3], Júlio Defaveri[1], Regina HG Martins[2*]

[1] Department of General Basis of Surgery, Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2] Department of Patology, Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[3] Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Madeira SLM, Semenzati GO, Fabro AT, Dias N, Defaveri J, Martins RHG. Morphological Study of the Surface of the Tongue and Pharynx of Rats Exposed to Chronic Use of Tobacco and Alcohol. Annu Rev Biomed Sci 2010;12:A47. Ethilism and tabagism are important risk factors for the development of oral and pharyngeal cancer. Histological studies of these sites are important to show its characteristics. Objective: To evaluate the histological changes in the tongue and pharynx of rats exposed to the chronic inhalation of tobacco and alcohol ingestion. METHODS: 40 rats were divided into 4 groups: GI (n-10; control group just kept confined without exposure to the agents), GII (n-10, ethilism group, rats submitted to the ingestion of increasing doses of ethyl alcohol solution), GIII (n-10, tabagism group, rats exposed daily to inhalation of cigarette smoke in increasing doses) and GIV (n-10, ethilism + tabagism group, exposed to both agents). After 260 days, euthanasia was performed, tongue and pharynx were removed for biopsy and histological analysis. Results: Histological analysis of the tongue showed: in GI no changes were detected; in GII, GIII and GIV was observed, respectively, dysplasia (40%, 60%, 60%), apoptosis (90%, 10%, 60%), hyperkeratosis (100%, 30%, 30), hyperplasia of basal cells (60%, 40%, 30,) and hyperplasia of apical cells (20%, 20%, 30). In the pharynx,the histological analysis showed:GI without alterations; in G1, GII, GIII and GIV, respectively, dysplasia (40%, 80%, 70%), apoptosis (10%, 0%, 30%), hyperkeratosis (30%, 100%, 70%), hyperplasia of basal cells (30%, 50%, 40)and hyperplasia of apical cells (10%, 30%, 40%). Conclusion: The chronic exposure of tobacco and alcohol showed significant alterations in the mucosa of the tongue and pharynx of mice.

***Correspondence**

Regina HG Martins. Faculdade de Medicina de Botucatu, UNESP, Disciplina de Otorrinolaringologia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: rmartins@fmb.unesp.br

Application for Headset Bleeding for Reduction of the Blood Pressure in Hypertensive Individuals

Kelly C Affonso, Gylvana Teixeira, Vanessa C Novak

Physiotherapy Department of Unicentro-Universidade Estadual do Centro Oeste; Guarapuava, PR, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Affonso KC, Teixeira G, Novak VC. Application for Headset Bleeding for Reduction of the Blood Pressure in Hypertensive Individuals. Annu Rev Biomed Sci 2010;12:A48. More than 50 types of HPV are known to infect the female genital tract, and a subset of them is known to have oncogenic potential. HPV and HIV are both sexually transmitted infections and share several common risk factors for acquisition. Hence, the prevalence of HPV infection is higher in HIV-infected subjects than in the HIV-negative population. A cross-sectional study was carried out to improve the state of evidence regarding the spectrum of HPV types circulating in women infected with HIV. A study of HPV prevalence was conducted in Botucatu, São Paulo, involving 78 HIV-positive women referred to the Day´s Hospital, from October 2008 to July 2009. Demographic and epidemiologic data were collected through clinical records. Cytological brushing of the cervix was performed with cytobrush and evaluated according to the 2001 Bethesda System for cervical cytological reporting. HPV DNA was detected by PCR and subsequently genotyped by PCR with HPV-specific primers. The overall prevalence of HPV infection among HIV-positive women was 75.7% (59/78), and the frequency of multiple infections was 23.7%. HPV genotyping was carried out in 59.3% of samples (35/59). Genotypes 18 and 33 were the most frequently detected in this population. In relation to cervical cytological results, 21.8% presented with cytological abnormalities. Cytological evaluation of the 59 HPV DNA-positive women revealed ASCUS/LSIL in 20.3%, HSIL in 8.5%, and no evidence of abnormal cytology in 71.2% of the women. In conclusion, the prevalence of HPV in HIV-positive women was high and is related to cytological abnormalities.

Financial Support: FAPESP (2008/55416-9)

Laboratory Diagnosis of Allergies by RAST

Mônica da Silveira[1], Adriana SAA Barbosa[2*], Emerson A Sobrinho[1], Paulo CM Pereira[2]

[1]Biolab Laboratory of Clinical Analyses, Bauru, SP, BRAZIL
[2] Department of Tropical Diseases, Botucatu School of Medicine, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Sobrinho EA, Pereira PCM. Laboratory Diagnosis of Allergies by RAST. Annu Rev Biomed Sci 2010;12:A49. The prevalence of allergic diseases has increased significantly in the last few years. For the possible confirmation of such pathologies, the IgE (Immunoglobulin E) and RAST (Radio Allergo Sorbentg Test) techniques are used. The latter is a radioimmunoassay used to detect specific antibodies. This study aimed at describing and analyzing RAST results in patients attending the Biolab Laboratory of Clinical Analyses - Bauru/SP. The methodology was performed from November/2008 to May/2009 by means of blood-sample collection. The chemiluminescence technique was used. For this study, a total number of 540 samples were obtained, and altered dosages for RAST were found in 111 (20.5%) of the patients. Of these, 63 were 0 to 5 years old, in whom alterations were found in 50.7% in RAST for cow's milk. For the age range from 6 to 15 years, 38 altered samples were found, and the highest prevalence was for house dust and mites, with 79.3% positive. In individuals over 16 years old, 10 altered samples were observed, and the prevalence was 100% for house dust. It is concluded that RAST dosages make it possible to diagnose sensitivity to allergens. For children up to five years old, the highest prevalence was for cow's milk, which is one of children's first contacts with food, except for breast milk. As regards individuals over 6 years of age, the highest prevalence was for house dust, thus explaining that various factors are causes of allergic diseases, among which is exposure to in-house allergens due to longer stays at home.

Financial support: Laboratório Sobrinho LTDA

*Correspondence

Adriana SAA Barbosa. Laboratório de Análises Clínicas Biolab. Rua Gustavo Maciel 14-30. CEP 17015-321. Bauru, SP, Brazil.

Email: drisierra@hotmail.com

Maternal and Post-Weaning Western Diet Exposure Does Not Modify Susceptibility to Development of Colon Cancer Induced by DMH in F1 Male Pups

Gisele AD Lopes[1], Marcos C Dias[1], Luís F Barbisan[2], Maria Aparecida M Rodrigues[2*]

[1] Pathology Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2] Morphology Department, Biosciences Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Lopes GAD, Dias MC, Barbisan LF, Rodrigues MAM. Maternal and Post-Weaning Western Diet Exposure Does Not Modify Susceptibility to Development of Colon Cancer Induced by DMH in F1 Male Pups. Annu Rev Biomed Sci 2010;12:A50. Aberrant crypt foci (ACF) in the colon of carcinogen-treated rodents are the earliest hallmark of colon carcinogenesis. We examined the effects of a Western Diet (WD), high in fat (corn oil) (20%) and low in micronutrients [i.e.; folic acid (1 mg/g), choline (0,12%) and fiber (2%)] during pregnancy, lactation and post-weaning in order to examine the susceptibility to development of colon cancer induced by 1.2-dimetylhydrazine (DMH) in male Sprague-Dawley (SD) rats. We evaluated whether WD reintroduction during adulthood can modify colon cancer susceptibility. WD was started at 12 days of pregnancy. F1 male pups were weaned (21d) (n=30) and fed the WD until post-weaning (42d). Subsequently, they received a control diet (AIN-76A) until 70 days of age. At this point, they were given four subcutaneous injections of carcinogen (DMH) (40 mg/body weight). One group was reintroduced to WD during adulthood. Both groups, fed on WD or control diet, were euthanazied at the end of the 20th week (medium-term assay) and ACF were stereoscopically scored for number, distribution and multiplicity along the colon in 0.2% methylene-blue whole amount preparations. Most ACF were present in the middle colon. ACF were also analyzed histologically. No significant differences in ACF number and multiplicity were observed between the groups exposed to WD during pregnancy, lactation and post-weaning and the group with WD reintroduction during adulthood. These findings indicate that maternal and post-weaning WD exposure does not modify the susceptibility to development of colon cancer induced by DMH in F1 male pups.

Financial Support: FAPESP (2007/57408-0)

Effects of Lycopene and Synbiotic on Early Biomarkers of Rat Colon Carcinogenesis

Marcos C Dias[1,2*], Kelly S Furtado[1,2], Gisele AD Lopes[2], Luis F Barbisan[1]

[1]Morphology Department, Bioscience Institute, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

[2]Pathology Department, Botucatu Medical School, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Dias MC, Furtado KS, Loper GAD, Barbisan LF. Effects of Lycopene and Synbiotic on Early Biomarkers of Rat Colon Carcinogenesis. Annu Rev Biomed Sci 2010;12:A51. Epidemiological studies have suggested a potential role for the synergistic action of chemopreventive agents in reducing the risk of colorectal cancer. The aim of this study was to assess the synergy of combined treatments with lycopene and synbiotic on early biomarkers of rat colon carcinogenesis. Male Wistar rats received a diet containing 300 ppm of lycopene and/or synbiotic (*Bifidobacterium lactis* plus oligofructose/inulin) over 2 weeks before and during 1.2-dimethylhydrazine initiation (4x 40 mg/kg b.wt., i.p., twice a week). No further treatment was introduced during the post-initiation phase. Half of the animals were euthanasied 24 hours after the last DMH application. Colons were processed for the immunohistochemical analysis of proliferating cell nuclear antigen (PCNA) and p53. HE staining was used for histological and apoptosis analysis. Fecal water genotoxicity was evaluated by comet assay. The remaining animals were sacrificed 8 weeks after the last DMH application. Colons were analyzed for aberrant crypt foci (ACF) and mucin-depleted foci (MDF) development in whole-mount preparations. Treatment with lycopene, synbiotic or their combination significantly increased apoptosis indices in the colon and reduced PCNA and p53 labeling indices and the formation of classical ACF and MDF. In addition, a lower genotoxicity of fecal water on leukocytes was detected in the groups treated with the chemopreventive agents. However, an synergistic effect of the treatments was observed only on fecal water genotoxicity and MDF parameters in DMH-treated rats. These results indicate that the combination of chemopreventive agents before and during DMH-initiation had a synergistic action only on selective early biomarkers of rat colon carcinogenesis.

Financial Support: FAPESP, CAPES

* **Correspondence**
Kelly S Furtado. Morphology Department, Bioscience Institute, UNESP. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

Feelings and Perceptions of Women in the Pregnancy-Puerperium Cycle Who Have Survived Severe Maternal Morbidity

Ana Paula P Carvalheira, Cristina MGL Parada

Nursing Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Carvalheira APP, Parada CMGL. Feelings and Perceptions of Women in the Pregnancy-Puerperium Cycle Who Have Survived Severe Maternal Morbidity. Annu Rev Biomed Sci 2010;12:A52. This study aimed at understanding the experience of women in the pregnancy-puerperium cycle who have survived severe maternal morbidity. The study subjects were 16 women attended at a tertiary-level service, which is a referral center for the care of high-risk obstetric patients. Data were collected by using semi-structured interviews with guiding questions related to the planning of and the desire for the ongoing pregnancy and to the experience of a high-risk pregnancy from its beginning until the time of the interview. The results showed the following themes and their respective core ideas: Theme 1. Describing the planning and the desire for pregnancy (CIs: I did not plan it, but it has been a blessing; I have had a high-risk pregnancy, that is why I did not plan it; My pregnancy was planned); Theme 2. Knowing about your health problem, its influence on pregnancy and describing the experience lived (CIs: I felt that I was at risk of death, but now I am fine; it was horrible, I felt as if I were killing my daughter); Theme 3. Experiencing the anguish of not being with the child after birth (CIs: I did not hear about my child after his birth; I suffered when I saw my child in the ICU, you dream of holding your child, breastfeeding him...); Theme 4. Gestational experience: the look on the newborn (CIs: It was a painful experience; I feel guilty for everything that happened; I found strength in my church).

Morphometric Analysis of Dermal Collagen by Color Cluster Segmentation

Hélio A Miot[1*], Gabrielli Brianezi[2]

[1] Dermatology and Radiotherapy Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2] Pathology Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Miot H.A, Brianezi G. Morphometric Analysis of Dermal Collagen by Color Cluster Segmentation. Annu Rev Biomed Sci 2010;12:A53. Computational morphometry of histological sections is an important tool in biomedical research. Despite the availability of specific commercial systems for morphometry, quantification of structures can be made from light microscopes, coupled with digital cameras and analyzed by free software. We present a strategy to estimate collagen fiber density and intensity in the skin. This quantification allows to characterize and important variable in studying aging, genetic syndromes, fibromatoses, collagen diseases and in therapeutic trials. Digital image permits identifying pixels and their respective intensities, which can be decomposed in color channels. Groups of similar pixels are linked to their tones of colors and can be identified by cluster analysis that replaces their median values (centroids) creating an image segmentation by color intensity. In ImageJ (freeware) this is performed by the plugin "k-means clustering", that allows to select several numbers of clusters. The frequency and intensity of each color group of pixels determines the collagen density and estimation of their intensity regarding the background tone color. Other segmenting methods can be used, such as binarization, but it does not allow the differentiation of the other dermis constituents and overestimates the amount of collagen. The segmentation by color clusters allows to control this bias, and even estimates the densities of other structures. The study of the dermal collagen can be further supplemented by analysis of fractions of collagen I and III (immunohistochemistry), evaluation of collagenogenesis from picrosirius staining, as well as thickness and orientation of the fibers. Morphometric techniques can also quantify such assessments.

By São Paulo State University – ISSN 1806-8774

*** Correspondence**

Hélio Amante Miot, Faculdade de Medicina de Botucatu, UNESP, Departamento de Dermatologia e Radioterapia. Distrito de Rubião Jr. CEP. 18618-000. Botucatu, SP, Brazil.

E-mail: heliomiot@fmb.unesp.br

Protective Effects of Coffee/Caffeine Intake the Process of Fibrosis and Hepatocarcinogenesis by DEN/CCl_4 in Male Wistar Rats

Kelly S Furtado[1], Marcos C Dias[1], Luis F Barbisan[2]

[1] Pathology Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2] Morphology Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Furtado KS, Dias MC, Barbisan LF. Fibrosis and Hepatocarcinogenesis by DEN/CCl4 in Male Wistar Rats. Annu Rev Biomed Sci 2010;12:A54. The role of coffee/caffeine in the process of fibrosis and hepatocarcinogenesis is still inconclusive. This study evaluated the protective effects of coffee/caffeine intake on fibrosis and the promotion stage of hepatocarcinogenesis induced by diethylnitrosamine (DEN) and carbon tetrachloride (CCl_4) treatments. Male Wistar rats were divided into six groups: G1 (positive control–DEN/CCl_4), G2 and G3 (DEN/CCl_4 plus 0.1% and 0.2% caffeine in drinking water, respectively), G4 (DEN/CCl_4, traditional coffee 8g/140mL of water), G5 (DEN/CCl_4, 2% instant coffee) and G6 (DEN/CCl_4, decaffeinate coffee 8g/140mL of water). All animals were initiated with a single dose of DEN (200 mg/kg, i.p.) and CCl_4 (0.5mL/kg, i.g.) once a week. At week 25, the animals were euthanasied and liver samples were processed for histological (HE), histochemical (picrosirius and reticulin) and immunohistochemical analysis for GST-P and PCNA expression. G2 and G5 presented GST-P positive lesions with size and percentage of area occupied lower than G ($p<0.01$). Also, G2 (1.48±1.25), G5 (2.91±1.35) and G6 (2.39±1.57) developed lower numbers of adenomas per liver area when compared to G1 (6.81± 4.18) ($p<0.05$). In special, the number of PCNA positive nuclei in S phase per liver area and fibrosis (i.e., percentage of area occupied for collagen I and III) were lower in G6 compared to G1. Our findings indicate that drinking coffee, even without caffeine, or isolated caffeine may have beneficial effects on the process of fibrosis and hepatocarcinogenesis induced by DEN/CCl_4. Further studies are needed to investigate the mechanisms of the protective effects of coffee/caffeine on rat liver.

Financial Support: FAPESP (2007/54858-5)

Diaphragmatic training in Waists Muscular Dystrophy

Ludmila Maran[1], Cíntia CS Martinagno[2], Nelson FS Junior[3], Rina M Magnani[1*]

[1] Pontifícia Universidade Católica - PUC Minas, Poços de Caldas, MG, BRAZIL
[2] Universidade Estadual do Centro-Oeste - UNICENTRO, Guarapuava, PR, BRAZIL
[3] Departamento de Clínica Médica, Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Maran L, Martinagno CCS, Serrão JR NF, Magnani RM. Diaphragmatic training in Waists Muscular Dystrophy. Annu Rev Biomed Sci 2010;12:A55. The Muscular Dystrophy involves a group of recessive inheritance genetic illnesses of the X chromosome, characterized for weakness, degeneration and muscle hypotrophy, with gradual and irreversible character, whose pathological alterations are secondary to the deficiency of the muscle protein called dystrophina and it's independent of the central nervous system organic or functional deficit. Authors affirm that the Muscular Dystrophy causes respiratory failure. The treatment of this pathology aims to guarantee to the patient a better quality of life. This study was with a feminine sex patient, 59 years of age, with clinical diagnosis of Waists Muscular Dystrophy per 32 years. The pulmonary function and expiratory flow maximum peak had been evaluated before and after 10 sessions of respiratory training with Threshold with load of 40% and 50% of the maximum inspiratory pressure for 5 series of 15 repetitions. The initial spirometric evaluation demonstrated restrictive ventilatory with reduction of inspiratory flows (FIF25%; FIF50%, 45% of predicted value and FIF75%, 65% of the predicted value), the expiratory flow peak was 54% of the predicted value and an increased of 15% of the value predicted for the Tiffenau index (VEF1/CVF). After the respiratory training the spirometry was normal with improvement of inspiratory flows (FIF25% 57%; FIF50% 65% and FIF75% with 99% of the predicted value) and the expiratory flow peak 78% of the value predicted for the patient. We could conclude that the diaphragmatic training protocol to Waists Muscular Dystrophy patient improved the respiratory function optimizing of this form her quality of life.

[*]**Correspondence**

Rina M Magnani. Universidade Estadual do Centro-Oeste, UNICENTRO, Departamento de Fisioterapia. Rua Camargo Varela de Sá, 03. Vila Carli - CEP 85040-080, Guarapuava, PR, Brazil.

Email: rinamagnani@gmail.com

Vaccination Campaign Against Rabies in Cats in the Municipality of Botucatu, SP between 2004 and 2009

Henί F Costa [1], Selene D Babboni [1], Peres C Cappellete[1], Valdinei MC Silva [2], Cassiano Victoria[2], José R Modolo[1]

[1]Planning in Animal Health and Public Health, Department of Hygiene Veterinary and Public Health, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2]Surveillance in Environmental Health, Municipal Prefecture of Botucatu, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Costa HF, Babboni SD, Cappellete PC, Silva VMC, VictoriaC, Modolo JR. Vaccination Campaign Against Rabies in Cats in the Municipality of Botucatu, SP between 2004 and 2009. Annu Rev Biomed Sci 2010;12:A56. Rabies is an anthropozoonosis, the main transmitters of which in the urban cycle being dogs, bats, and cats in decreasing order of prevalence. With fatal outcomes in almost 100% of cases, this illness represents a major public health problem. Of the 572 human cases reported over the last ten years in Brazil, where this disease is endemic, the cats were responsible for transmission of 26 cases, while dogs were responsible for 427 cases. In the state of Sao Paulo, the last human death was in 2001, due to the transmission of rabies by the patient's own unvaccinated pet cat. Despite the numerical difference between aggressor species, one can not underestimate the zoonotic potential of cats in transmission of rabies. Anti-rabies prophylaxis by immunization of pets in vaccination campaigns is one of the measures of disease control adopted by municipalities. The city of Botucatu, which has been executing annual anti-rabies vaccination campaigns for dogs and cats since 1968, lists no indigenous cases of rabies in these animals for over twenty years. From 2004 to 2009, the number of cats vaccinated each year on campaigns, respectively, was 2055, 2146, 2243, 2338, 1895, and 2239. Regarding each animal's vaccination history, 4547 (35.20%) were primed, 8100 (62.71%) had already been vaccinated more than once, and in 269 (2.09%) cat owners were unable to provide the vaccination history. Knowledge of the density of animals is important for municipalities to implement health programs involving health education regarding dogs and cats.

Experimental Autoimmune Encephalomyelitis in Lewis Rats is Not Affected by Previous Infection with *Strongyloides venezuelensis*

Fernanda Chiuso-Minicucci[1], Raphael S Peres[1], Nelson M Marra[2], Sofia FG Zorzella-Pezavento[1],Thaís GD França[1], Larissa LW Ishikawa[1], Larissa C Rosa[1], Alessandro FT Amarante[2], Alexandrina Sartori[1*]

[1] Microbiology and Immunology Department, Biosciences Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2]Parasitology Department, Biosciences Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Chiuso-Minicucci F, Peres RS, Marra, NM, Zorzella-Pezavento SFG, França TGD, Ishikawa LLW, Rosa LC, Amarante AFT, Sartori A. Experimental Autoimmune Encephalomyelitis in Lewis Rats is Not Affected by Previous Infection with Strongyloides venezuelensis. Annu Rev Biomed Sci 2010;12:A57. In developed countries, there has been a steady increase in the incidence of autoimmune, allergic and inflammatory diseases. The hygiene hypothesis proposes that exposure to certain infectious agents is associated with protection against the development of autoimmunity and allergy. In this study, we evaluated the effect of previous infection with *Strongyloides venezuelensis* on Experimental Autoimmune Encephalomyelitis (EAE). Female Lewis rats were infected with 4000 *S. venezuelensis* infective filiform larvae subcutaneously. On the 32nd day following infection, animals were submitted to induction of EAE by immunization with myelin basic protein associated to Complete Freund Adjuvant plus *Mycobacterium butyricum.* Animals were evaluated daily for weight loss and clinical score. Animals were euthanized during the recovery phase to assess the immune response (cytokine production and antibody levels determined by ELISA) and inflammatory infiltration in the central nervous system (CNS). Previous infection with *S. venezuelensis* did not affect weight loss, clinical score or inflammation in the CNS. Further, the specific immune response (antibody and cytokine production) against myelin was not affected by previous infections. We concluded that infection with *S. venezuelensis* does not confer a protective or deleterious effect on EAE development.

Financial Support: FAPESP (2007/05038-5)

*Correspondence
Alexandrina Sartori. Instituto de Biociências, UNESP, Departamento de Microbiologia e Imunologia. Distrito de Rubião Jr. CEP. 18618000. Botucatu, SP, Brazil.
E-mail: sartori@ibb.unesp.br

BCG / DNAhsp65 Prime-Boost Strategy is not Deleterious for Experimental Autoimmune Encephalomyelitis

Sofia FG Zorzella-Pezavento[1], Clara PF Guerino[1], Fernanda Chiuso-Minicucci[1], Thais GD França[1], Larissa LW Ishikawa[1], Célio L Silva[2], Alexandrina Sartori[1*]

[1] Microbiology and Immunology Department, Biosciences Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2] Biochemistry and Immunology Department, USP - University of São Paulo, Ribeirão Preto, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Zorzella-Pezavento SFG ,Guerino CPF, Chiuso-Minicucci F, França TGD, Ishikawa LLW, Silva CL, Sartori A. BCG / DNAhsp65 Prime-Boost Strategy is not Deleterious for Experimental Autoimmune Encephalomyelitis. Annu Rev Biomed Sci 2010;12:A58. The DNA vaccine (pVAXhsp65) containing the heat shock protein (hsp65) gene from *Mycobacterium leprae* shows high immunogenicity and protective efficacy against experimental tuberculosis. As anti-hsp65 immunity could trigger or worsen an autoimmune disease, we evaluated if a prime-boost BCG /pVAXhsp65 strategy would affect the development of experimental autoimmune encephalomyelitis (EAE). Female Lewis rats were immunized with BCG followed by two pVAXhsp65 boosters. Fifteen days following the last DNA dose, the animals were submitted to EAE induction and evaluated daily for weight loss and clinical score. Animals were euthanized during recovery phase to assess the immune response and inflammatory infiltration at the central nervous system (CNS). Previous immunization with this prime boost strategy did not aggravate or accelerate clinical manifestations and even decreased inflammation in the CNS. BCG directly induced immunity against rhsp65 characterized by significant production of IFN-γ and IgG1 anti-hsp65 antibodies and also modulated the host immune response by triggering a significant production of IL-10. These results show that this vaccine does not confer a deleterious effect on EAE development. Decreased inflammation in the CNS and immunomodulatory activity may even suggest a potential protective ability.

Financial Support: FAPESP (2007/05353-8)

[*]**Correspondence**

Alexandrina Sartori. Instituto de Biociências, UNESP, Departamento de Microbiologia e Imunologia. Distrito de Rubião Jr. CEP. 18618000. Botucatu, SP, Brazil.

E-mail: sartori@ibb.unesp.br

Spirometric Evaluation and of the Smoking in Students of the Course of Physical Theraphy of the State University of the Center-West – Guarapuava (PR)

Maria T Tullio, Nelson F Serrão-Jr*, Rina M Magnani

Physical Therapy Department, University of the Center-West, UNICENTRO – Paraná State University; Guarapuava, PR, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Tulio MT, Serrão-Jr NF, Magnani, RM. Spirometric Evaluation and of the Smoking in Students of the Course of Physical Theraphy of the State University of the Center-West – Guarapuava (PR). Annu Rev Biomed Sci 2010;12:A59. Introduction: Literature points high frequencies of smoking in the population. An increase in the early of the use of the tobacco, mainly in elapsing of the university life of young e is proven adult. For the functional evaluation of smoking individuals, it enters the used examinations more, the spirometry is a test that allows the quantification of the ventilations riots. Objective: To determine the prevalence of the smoking, the degree of dependence to the cigarette and the smoke influence in the pulmonary function of the students of physical therapy of the State University of the Center-West of the Paraná (UNICENTRO). Methods: 137 divided students of first to the room the year of the course had participated of the research. The sex, smokers had been enclosed in the study individuals of both or not, without distinction of color or race, steady hemodynamic. The used criteria of exclusion had been individuals that presented some instability or cardiac disease, or had carried through abdominal-thoracic surgery previously. Results: All the item evaluated by means of the spirometer had demonstrated to measured values below of the averages foreseen for all the groups, being that the FEV_1, the FVC, the FEP and the MEF had had statistical excellent values for the G2 (p=0.01366) and G3 (p=0.02006). The spirometry of active the smoking colleges student had demonstrated value of significance for the variables: FEP in light group (p = 0.01052) and moderate (p = 0.01747) and MEF in the moderate group (p = 0.01821). Conclusion: One concluded that young individuals with normal spirometry present the average expiratory flow below of the foreseen one and that the cigarette intervenes in such a way with the flow in active smokers as in passive smokers.

* **Correspondence**

Nelson F Serrão Junior, Faculdade de Medicina de Botucatu, UNESP, Departamento de Clínica Médica. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.
E-mail: nelson_fst@hotmail.com

Spironolactone Reduces Mortality of Aging Spontaneously Hypertensive Rats

Marcelo DM Cezar, Ricardo L Damatto, Dijon HS Campos, Paula F Martinez, Aline RR Lima, Camila M Rosa, Camila Bonomo, Daniele M Guizoni, Elenize J Pereira, Antonio C Cicogna, Marina P Okoshi, Katashi Okoshi

Department of Internal Medicine, Botucatu Medical School, São Paulo State University, UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Cezar MDM, Damatto RL, Campos DHS, Martinez PF, Lima ARR, Rosa CM, Bonomo C, Guizoni DM, Pereira EJ, Cicogna AC, Okoshi MP, Okoshi K. Spironolactone Reduces Mortality of Aging Spontaneously Hypertensive Rats. Annu Rev Biomed Sci 2010;12:A60. Aldosterone blocker attenuates morphologic and functional alterations in heart failure (HF). Clinical trials have demonstrated that aldosterone blockers increase survival of patients with advanced HF. The purpose of this study was to evaluate the effects of spironolactone (SPR), initiated before clinical evidence of HF, on mortality and left ventricular (LV) remodeling in spontaneously hypertensive rats (SHR). Sixteen month-old male SHR were separated into two groups: control and SPR (20 mg/kg/day for six months). Arterial pressure was measured by the indirect tail-cuff method. Echocardiography was performed to evaluate *in vivo* LV structure and function (control, n=11; SPR, n=19). Myocardial function was analyzed in LV papillary muscles under isometric contractions (control, n=18; SPR, n=20). Conctractile reserve was evaluated after extracellular calcium concentration increase, post-pause contraction, and â-agonist isoproterenol stimulation. Hydroxyproline concentration was measured in LV tissue. Statistical analysis: Student's *t* test and chi-square ($p<0.05$). Mortality rate was significantly lower in the SPR group (38% vs. 71%, $p<0.05$). Arterial pressure was not different between groups (control=199±43 and SPR=200±35 mmHg). LV structural and functional echocardiographic parameters did not differ between groups. *In vitro* myocardial function was similar between groups (developed tension, maximum rate of developed tension, resting tension and maximum rate of tension decline), in basal condition and post inotropic stimulation. Myocardial hydroxyproline concentration was not different between groups (control=7,11; SPR=7,18). Conclusion: Aldosterone blockade, initiated before heart failure clinical evidence, reduces mortality rate without changing cardiac remodeling in spontaneously hypertensive rats.

Financial Support: FAPESP, CNPq.

*Correspondence

Marcelo DM Cezar. Rua João Passos, 600, Centro, Botucatu SP, CEP: 18600-040, Brazil. Phone: 14 3813 5189.
Email: marccezar@hotmail.com

Protective Effect of Coffee and Caffeine Intake on the Hepatotoxicity Induced by Thioacetamide in Male Wistar Rats

Kelly S Furtado[1], Monize G Prado[2], Marco A Aguiar e Silva[2], Luis F Barbisan[2]

[1] Pathology Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2] Morphology Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Furtado KS, Prado MG, Aguiar e Silva MA, Barbisan LF. Protective Effect of Coffee and Caffeine Intake on the Hepatotoxicity Induced by Thioacetamide in Male Wistar Rats. Annu Rev Biomed Sci 2010;12:A61.
Epidemiological and experimental studies have shown the beneficial effects of coffee or caffeine on the prevention of liver damage, fibrosis and carcinogenesis. This study evaluated the protective effects of drinking coffee/caffeine on hepatotoxicity induced by thioacetamide (TAA) in male Wistar rats. Animals were divided into five groups (with 12 rats each) and treated with TAA (200mg/Kg, i.p.) twice a week during 8 weeks as follows: G1 (negative control), G2 (TAA, positive control), G3 (TAA plus traditional coffee 8g/140mL of water), G4 (TAA plus decaffeinate coffee 8g/140mL of water) and G5 (TAA plus 0.1% caffeine in drinking water). All animals were euthanasied at week 8. Blood samples were obtained for alanine aminotransferase (ALT) analysis and liver samples were processed for histological (HE staining) and immunohistochemical analysis for PCNA expression. ALT level was lower in groups G3 and G5 than in group G2 ($p<0,001$). G3 and G5 showed a higher incidence of animals with grade I centrilobular necrosis induced by TAA when compared to G2 ($p=0.07$). The growth fraction and the number of PCNA-positive nuclei in S phase were lower in G3, G3 and G5 when compared to G2 group ($p<0.001$). The preliminary results of this study suggest that treatment with traditional coffee or 0.1% caffeine may have a potential preventive effect against TAA toxic effects in the liver of male Wistar rats.

Financial Support: FAPESP (2009/50890-7)

Reversibility of Fertility in Adult Male Rats Treated with the Antineoplastic Agent Cisplatin at Puberty*

Ana Paula A Favareto[1], Fabíola C Toledo[1], Carla DB Fernandez[1], Wilma G Kempinas[2]

[1] Graduate Program in Cell and Structural Biology, Institute of Biology, State University of Campinas, Campinas, SP, BRAZIL
2 Department of Morphology, Biosciences Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Favareto APA, Toledo FC, FernandezCDB, Kempinas WG. Reversibility of Fertility in Adult Male Rats Treated with the Antineoplastic Agent Cisplatin at Puberty. Annu Rev Biomed Sci 2010;12:A62. Cisplatin is widely used in clinical oncology. Despite its widespread use for treatment of testicular cancer, which affects mainly young men, no reports were found about reproductive effects caused by treatment during puberty. The aim of this study was to evaluate short and long-term effects on fertility, pregnancy outcome and progeny of cisplatin-treated pubertal male rats. Wistar male rats (45 days old) were assigned into two groups: Control (n=11, saline 0.9%) and Treated (n=11, 1mg/kg of cisplatin, i.p., 5 days/week, for 3 weeks). At 66 (post-pubertal age) and 140 (adult age) days, rats were mated with adult females (2 pregnant females/male). After mating, vaginal smears were collected for determination of gestational day zero (GD0). On GD20, one set of females was killed by decapitation and subjected to laparatomy for reproductive performance evaluation, while the other set was allowed to deliver. On postnatal day 1, pups were weighed, sexed and the anogenital distance was measured with a pachymeter. Statistical analyses were performed using Student´s t test and Mann-Whitney test ($p<0.05$). The rate of pre-implantation loss was increased ($p<0.05$), while the fertility potential was decreased ($p<0.05$) in the cisplatin-treated rats that were mated soon after post-puberty, but the reproductive performance was not altered at adulthood. Number, body weight, sex ratio and anogenital distance of the pups were similar ($p>0.05$) between the two groups, in both ages. These results show that the reproductive disorders caused by cisplatin soon after puberty did not persist into adulthood.

Financial support: FAPESP (2007/59604-1)

P53 Expression in the "Free-of-Neoplasia" Urothelium of Patients with History of Urinary Bladder Cancer

Merielen G Nascimento*, Bruno F Castaldi, João LV de Camargo

Center for the Evaluation of the Environmental Impact on Human Health (TOXICAM), Department of Pathology, Botucatu Medical School,University of São Paulo State (UNESP), Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Nascimento MG, Castaldi BF, de Camargo JL. P53 expression in the "free-of-neoplasia" urothelium of patients with history of urinary bladder cancer. Annu Rev Biomed Sci 2010;12:A63. Immunohistochemistry expression of the p53 protein has been widely used as a prognostic marker of urinary bladder cancer (UBC). The increased expression of the p53 protein is related to mutation of its TP53 gene, suggesting genetic instability of the urothelium. After resection of the primary tumor and before neoplasia recurs, the urothelium presents no histopathological alterations, seeming to be "free-of-neoplasia". Previous studies have reported that DNA-damaged epithelial cells do exist within these "free-of-neoplasia" urothelia. The aim of this study was verify p53 protein expression in the "free-of-neoplasia" urothelia and in resected UBC samples. Seventy-nine UBC cases, comprising 127 surgical specimens filled at Department of Pathology, Botucatu Medical School, UNESP were reviewed. The incidences of low-grade, non-invasive high-grade and invasive high-grade papillary carcinomas with e" 75% p53-positive cells were 2%, 14% and 25% respectively, a clear relationship between p53 expression and tumor aggressiveness. None of the bladders in the "free-of-neoplasia" period showed more than 75% of p53-positive cells. Most of the "free-of-neoplasia" bladders showed rare (d"25%; 33% of samples) or none (33% of samples) p53-positive cells. Higher rates (between 25% and 75%) of p53-positive cells were seen in 34% of the urinary bladders. Since patients with increased levels of p53 protein expression in resected UBC seem to be prone to tumoral recurrence, the use of this immunohistochemical marker in apparently normal urothelium during the follow-up of resected patients can be a good tool to predict potential of recurrence.

Financial Support: FAPESP 05/58917-0, 06/55634-0, CNPq 304690/2006-6.

***Correspondence**

Merielen G Nascimento. Faculdade de Medicina de Botucatu, UNESP, Departamento de Patologia. Distrito de Rubião Jr. CEP. 18618000. Botucatu, SP, Brazil.

E-mail: merielen@fmb.unesp.br

Diabetes Induces Oxidative Stress in Pulmonary Tissue in Rats with Alloxan-induced Diabetes

Amanda N Lucchesi[1], Olivia AX Suarez[2], Silvio FG Marques[1], Antônio JM Cataneo[1], César T Spadella[1*]

[1] Surgery and Orthopaedics Departament, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL

[2] Paediatrics Department, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Lucchesi AN, Suarez OAX, Marques SFG, Cataneo AJM, Spadella CT. Diabetes Induces Oxidative Stress in Pulmonary Tissue in Rats with Alloxan-induced Diabetes. Annu Rev Biomed Sci 2010;12:A64. In this study we determined whether diabetes is capable to induce oxidative stress in lungs of rats rendered diabetic by alloxan injection. Sixty male Lewis rats were randomly assigned to 2 experimental groups: NC – 30 non-diabetic control rats; DC – 30 untreated diabetic control rats. Each group was further divided into 3 subgroups of 10 rats, which were killed after 1, 3, and 6 months of follow-up, respectively. Glucose, glycosylated hemoglobin and insulin were determined in plasma for all rats. Lipid hyproperoxide (LPO) concentrations and enzyme activities of superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-Px) were measured in pulmonary tissue of all rats. DC rats showed elevated blood sugar and glycosylated hemoglobin levels, with insulin blood levels significantly lower than NC ($P<0.001$). These rats also showed significantly increased LPO concentrations in the lungs ($P<0.01$) after 1, 3 and 6 months follow-up. In contrast, SOD, CAT, and GSH-Px antioxidant activities were significantly ($P<0.01$) reduced after 3 and 6 months after diabetes induction. We conclude that diabetes induces oxidative stress in pulmonary tissue of diabetic rats. The model may be useful for the further characterization of the patho-physiology and treatment of chronic diabetic lesions in the lungs.

Financial Support: FAPESP (2008/56603-7)

Morphological and Ultrastructural Changes in Pulmonary Parenchyma of Alloxan-Induced Diabetic Rats

Olívia AX Suarez[1], Amanda N Lucchesi[2], César T Spadella[2], Antônio JM Cataneo[2]

[1] Paediatrics Department, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL

[2] Surgery and Orthopaedics Departament, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Suarez OAX, Lucchesi AN, Spadella CT, Cataneo AJM. Morphological and Ultrastructural Changes in Pulmonary Parenchyma of Alloxan-Induced Diabetic Rats. Annu Rev Biomed Sci 2010;12:A65. The aim of this study was to assess the course of histopathologic changes in the lungs of rats rendered diabetic by alloxan injection. Sixty male Lewis rats were randomly assigned to 2 experimental groups: NC – 30 non-diabetic control rats; DC – 30 untreated diabetic control rats. Each group was further divided into 3 subgroups of 10 rats, which were killed after 1, 3, and 6 months of follow-up, respectively. Clinical and laboratory parameters, fresh and fixed lung weights, and fixed lung volumes were recorded for all rats. The left lungs were used for scanning light microscopy and the right for transmission electron microscopy. Morphometric studies were performed using digital images, KS 300, and Leica Quin Lite 3.1 softwares. Total number of alveoli, alveolar perimeter, alveolar surface area, and alveolar epithelial (AE) basal laminae thickening were randomly measured in 5 rats from each subgroup. Fifty alveoli were analyzed in each rat/subgroup, in a total of 250 measurements performed for each analyzed parameter. DC rats showed elevated blood glucose and glycosylated hemoglobin levels, with insulin blood levels significantly lower than NC ($P<0.001$). Fresh and fixed lung weights and fixed volumes were significantly reduced in DC rats, although their proportions/ body weight were increased at 6 months. The total number of alveoli per lung in DC was higher than in controls, while alveolar perimeter and surface areas were significantly diminished ($P<0.01$). AE basal laminae were significantly thicker in DC than NC ($P<0.01$). We conclude that the pulmonary parenchyma is also affected by DM.

Financial Support: FAPESP (2008/56603-7)

Diabetes Reduces Plasma Testosterone but Not Dihydrotestosterone Levels, and Does Not Alter Prostate Androgen Receptor Expression

Larissa M Ribeiro*, Elaine M Porto, Wellerson R Scarano, Luis A Justulin-Jr, Sérgio L Felisbino

Morfology Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Ribeiro LM, Porto EM, Scarano WR, Justulin-Jr LA, Felisbino SL. Diabetes reduces plasma testosterone but not dihydrotestosterone levels, and does not alter prostate androgen receptor expression. Annu Rev Biomed Sci 2010;12:A66. Adequate testosterone levels are necessary for the development, growth and maintenance of the male reproductive system. Testosterone deficiency is common in men with diabetes in whom it may contribute to impaired performance, with consequent reduction of the activity of the androgen regulated organs, such as the prostate. However, little attention has been given to the plasma dihydrotestosterone (DHT) level, the most potent androgen, nor to the expression of the androgen receptor (AR) in target tissues. Here, we investigated the effect of type I diabetes mellitus on DHT plasma levels and on prostate AR expression during rat pubertal growth. Diabetes was induced in prepubertal male rats through administration of streptozotocin (STZ; 40 mg/kg). Diabetic, diabetic treated with insulin, and age-matched control animals were killed by overdoses of pentobarbital. The ventral prostatic lobe (VP) was dissected, weighed and processed for immunohistochemistry for AR; plasma T and DHT levels were also determined. Hyperglycemia at puberty reduced VP weight gain to about 50% and plasma T level to about 80% of the control levels. In contrast there were no changes in plasma DHT levels. Insulin replacement restored the VP weight gain, but not the plasma T levels, which remained 90% below the ones of controls. Immunohistochemistry showed that AR expression in the prostate epithelial cells did not change with hyperglycemia or insulin replacement. Thus, the expression in the prostate epithelial cells appears to be regulated by DHT, and to a minor extent is also controls glandular growth.

*Financial Support: FAPESP (2008/57959-0)

The Impact of Hyperglycemia and Insulin Replacement on Matrix Metalloproteinases Activity during Prostate Pubertal Growth

Sérgio AA Santos, Elaine M Porto, Larissa M Ribeiro, Lívia M Lacorte, Luis A Justulin-Jr, Sérgio L Felisbino

Morfology Departament, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Santos SAA, Porto EM, Ribeiro LM, Lacorte LM, Justulin-Jr LA, Felisbino SL. The Impact of Hyperglycemia and Insulin Replacement on Matrix Metalloproteinases Activity during Prostate Pubertal Growth. Annu Rev Biomed Sci 2010;12:A67. The matrix metalloproteinases (MMPs) are a family of enzymes involved in breakdown of extracellular matrix (ECM) components. The most common extracellular pathology in diabetes is the thickening of the basement membrane as a result of the deposition of ECM proteins. The expression and activity of MMPs in diabetes have been reported predominantly in relation to vascular complications. Here, we investigated if diabetes interferes with MMP-2 and MMP-9 activities during prostate pubertal growth and the effect of insulin replacement. Prepubertal male Wistar rats (40 days-old) were used. Diabetes was induced by streptozotocin (STZ; 40mg/kg body weight) at 40-days old. Three (simultaneous) or 21 days (late) after STZ-administration, insulin was replaced (3U/100g) for 17 and 20 days, respectively. Prostatic lobes, ventral, dorsal and anterior, were dissected out and processed for biochemical analysis by gelatin-zymography. The zymography analysis showed clear bands of MMP-2 and MMP-9 in control, diabetic and diabetic plus insulin replacement groups. The analysis of zymography showed that the prostatic lobes from diabetic animals presented with reduced activities of MMP-2 and -9. Simultaneous and late replacement of insulin restored the MMPs activities to values greater than the control levels. In conclusion, diabetes, directly or indirectly (testicular damage with androgen level reduction), disturbs prostate pubertal growth and leads to an effective reduction in MMPs activities. Insulin replacement, even delayed, restores the glandular structure and the MMPs activities, showing that adverse effects of this disease in the prostate are reversible and MMPs play a role in prostate growth during puberty.

Financial Support: FAPESP (2007/05219-0)

Benign Prostatic Hyperplasia Treatment by Alpha-Blockade Induces Fibrosis in the Prostate Stroma

Flávia K Delella[1,2], Fernanda L Almeida[1,2], Maeli Dal Pai Silva[2], Sérgio L Felisbino[2*]

[1]Department of Cell Biology, Institute of Biology – State University of Campinas (UNICAMP), Campinas, SP, BRAZIL

[2] Department of Morphology, Institute of Biosciences – Sao Paulo State University (UNESP), Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Delella FK, Almeida FLA, Dal Pai-Silva M, Felisbino FL. Benign Prostatic Hyperplasia Treatment By Alpha-Blockade Induces Fibrosis In The Prostate Stroma. Annu Rev Biomed Sci 2010;12:A68. Doxazosin, an alpha-adrenoceptor antagonist, induces the relaxation of smooth muscle cell tonus and reduces the clinical symptoms of benign prostatic hyperplasia (BPH). However, the effects of doxazosin in the prostate stroma are not fully known. In a previous study, we showed that rat prostates treated by doxazosin exhibited an increased area of collagen fibers in the prostatic stroma. Herein, we investigated the effects of doxazosin on type I and III collagens and TGF Beta-1 gene expression of the rat ventral prostate, comparing the results with the control group. Intact adult Wistar rats (n=5) or adult Wistar rats (n=5) treated by oral gavage with doxazosin (25mg/kg/day) during 7 and 30 days were killed by pentobarbital overdose. The ventral prostates were excised and kept in *Trizol* for posterior quantification of type I and type III collagen and TGF Beta-1 mRNA expression by real-time PCR. The type I collagen and TGF Beta-1 mRNA concentration increased after 7 days ($p>0.05$) and decreased significantly after 30 days of treatment ($p<0.01$), while type III collagen mRNA expression decreased after both periods of treatment. Our results suggest that doxazosin induces fibrosis in the prostate stroma by increasing type I collagen fibers synthesis and deposition and that this process appears to be mediated by the TGF beta-1 pathway. The blockade of smooth muscle cell contraction activity by doxazosin treatment appears to lead to a higher demand for extracellular matrix fiber reinforcement and with secondary fibrosis of the prostate stroma. This may interfere negatively with long term BPH treatment.

Financial Support: FAPESP (2006/0660114-6)

* **Correspondence**

Sérgio L Felisbino. Departamento de Morfologia, Instituto de Biociências, UNESP, Distrito de Rubião Jr. CEP. 18618000. Botucatu, SP, Brazil.

E-mail: felisbin@ibb.unesp.br

Influence of Diet and Polymorphisms in the *GSTM1, GSTT1, GSTP1, CYP1A1, CYP2E1, XRCC1, XRCC3, HOGG1, TS* and *MTHFR* Genes on the Level of DNA Damage

Renato P Prado[1], Bruna F Santos[1], Marcela G Silveira[1], Giovana C Degelo[2], Juliana Marino[1], Kátia RC Assis[1], Daisy MF Salvadori[1], Marcelo SP Ladeira[3*]

[1] Pathology Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[2] Genetic Department, Bioscience Institute, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

[3] Multigene - Research and Services in Human Genetics and Toxicology, Pharmacogenetics and nutrigenomics

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Prado RP, Santos BF, Silveira MG, Degelo GC, Assis KRC, Salvadori DMF, Ladeira MSP. Influence of Diet and Polymorphisms in the GSTM1, GSTT1, GSTP1, CYP1A1, CYP2E1, XRCC1, XRCC3, HOGG1, TS AND MTHFR Genes on the Level of DNA Damage. Annu Rev Biomed Sci 2010;12:A69. The present study evaluated the influence of diet and polymorphisms in the *GSTM1, GSTT1, GSTP1, CYP1A1, CYP2E1, XRCC1, XRCC3, hOGG1, TS* and *MTHFR* on the level of oxidative DNA damage, misincorporation of uracil, and DNA repair efficiency in lymphocytes of individuals with different diets. Group I (GI): 49 individuals with a diet rich in fruit and vegetables and poor in industrialized products; group II (GII): 56 individuals with a diet rich in industrialized products and poor in fruit and vegetables. Oxidative DNA damage, misincorporation of uracil and DNA repair were assessed by the Comet assay and polymorphisms by PCR-RFLP. The individuals in GI presented lower levels of oxidative DNA damage and DNA damage induced by H_2O_2 . In terms of DNA damage, the following associations were found in G1: a) carriers of the *MTHFR* C1298C genotype showed higher levels of DNA damage; b) carriers of the *TS* TSER3R/3R genotype had higher levels of oxidized purines. In GII, the following associations were observed: a) carriers of the *GSTT1* (-/-), or the *CYP2E1* C1/C2, or the *XRCC1* Arg399Arg genotypes showed higher levels of oxidized purines and pyrimidines, misincorporated uracils and a lower DNA repair efficiency; b) carriers of the *MTHFR* C1298C genotype showed higher levels of DNA damage and c)carriers of the *TS* TSER3R/R genotype had higher levels of oxidized purines and a lower DNA repair efficiency. In conclusion, polymorphisms of genes involved in the metabolism of xerobiotics and DNA repair modulate levels of DNA damage and the efficiency of DNA repair.

Financial Support: FAPESP (05/54450-0) and CNPq (305815/2006-7).

*Correspondence

Marcelo SP Ladeira. Faculdade de Medicina de Botucatu, UNESP, Departamento de Patologia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: mladeira@fmb.unesp.br

Specialist System Applied in the Evaluation of Respiratory Physical Therapy

Franciele Venske, Nelson F Serrão-Jr, Angelita M Ré

Centro-Oeste State University – UNICENTRO, Paraná State University, Guarapuava, PR, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Venske F, Serrão-Jr NF, Ré AM. Specialist System Applied in the Evaluation of Respiratory Physical Therapy. Annu Rev Biomed Sci 2010;12:A70. The use of computational technologies associates the consultation of description is very important. Therefore, it is a form to speed and to store information. In this context, computational techniques that can be used, amongst them exist many can be detached the Specialists Systems (SS´s). The objective is to develop a SS for the evaluation of respiratory physical therapy that beggest security guard at the moment of the evaluation supplies to the physiotherapists and to its end, to provide professionals with stronger trustworthiness in the clinical and physical therapeutic diagnosis, as well as to help them find the most adequate treatment plan. The System Specialist Applied in the Evaluation of Respiratory Physical Therapy was generated with the use of the Expert Sinta ®. For the execution of the system, it must be answered the generated questions of the consultation related with description and the physical examination. After the execution of the set of question, the system makes a processing of the information and after that it shows the result of the carried through consultation. The artificial intelligence, especially the SS´s, presents a great utility in what it says respect I assist to it of professionals in the most diverse areas. The archetype in question obtains to provide to the user a stronger trustworthiness and security at the moment to diagnosis a pathology, for being the pneumology area a complex net of signals and links and repeated symptoms in innumerable illnesses beyond becoming the evaluation most agile.

TP53, ANLN and S100P Genes Expression in Urinary Bladder Carcinoma Cell Lines

Glenda N Silva[1], Camila P Gobette[1], Michelle C Búfalo[2], Daisy MF Salvadori[1]

[1] Department of Pathology, Botucatu Medical School, UNESP – São Paulo State University; Botucatu, SP, BRAZIL

[2] Department of Microbiology and Immunology, Biosciences Institute, UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Silva GN, Gobette CP, Búfalo MC, Salvadori DMF. TP53, ANLN and S100P Genes Expression in Urinary Bladder Carcinoma Cell Lines. Annu Rev Biomed Sci 2010;12:A71. Urinary bladder cancer is the fourth most common malignancy in the Western world, with transitional cell carcinoma comprising 90% of all primary bladder tumors. Clinically, the highly unpredictable potential for recurrence is one of the characteristics of these tumors. In order to identify genetic biomarkers related to tumor progression and recurrence, the present study was designed to evaluate TP53, ANLN, and S100P gene expression in bladder transitional carcinoma cell lines RT4 (low grade, wild type TP53), 5637 (moderately differentiated, mutated TP53), and T24 (high grade, mutated TP53), using qRT-Real Time PCR. The results showed overexpression of TP53 gene in 5637 cells, when compared to the other two cell lines. Moreover, the ANLN gene, related to tumor progression, was upregulated in 5637 cell line. On the other hand, overexpression of the S100P gene, implicated in the progression and cellular immortalization, was observed in the low grade cell line (RT4). In conclusion, the modulation of S100P and ANLN genes does not seem to be associated with the tumor grade. Moreover, TP53 expression was not related to the mutations in the gene. Therefore, information on TP53, S100P, and ANLN gene expression must be interpreted with caution if used as marker for bladder cancer therapy.

Financial Support: FAPESP and CNPq

Influence of the Antioxidant Quercetin on Cardiac Structure and Function of Diabetic Rats: *in Vivo* and *in Vitro* Studies

Natasha P Xavier[1], Camila M Rosa[1], Dijon HS Campos[1], Louise L Rodrigues[1], Marcelo DM Cezar[1], Paula F Martinez[1], Ricardo L Damatto[1], Camila Bonomo[1], Ana Angélica H Fernandes[2], Antonio C Cicogna[1], Marina P Okoshi[1], Katashi Okoshi[1]

[1]Department of Internal Medicine, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL
[2]Department of Chemistry and Biochemistry, Bioscience Institute, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Xavier NP, Rosa CM, Campos DHS, Rodrigues LL, Cezar MDM, Martinez PF, DamattoRL, Bonomo C, Fernandes AAH, Cicogna1 AC, Okoshi MP, Okoshi K. Influence of the Antioxidant Quercetin on Cardiac Structure and Function of Diabetic Rats: in Vivo and in Vitro Studies. Annu Rev Biomed Sci 2010;12:A72. The cardiomyopathy of diabetes mellitus (DM) has been associated with increased reactive oxygen species. Antioxidants can be useful to prevent development and progression of DM-related complications. The aim of this study was to verify whether the antioxidant quercetin (QC) can attenuate left *ventricular (LV) dysfunction in* rats with DM. Male Wistar rats were divided in three groups: control (CTL, n=13); DM, n=15; and DM+QC, n=11. Diabetes was *induced* by intraperitoneal (i.p.) injection of *streptozotocin (*50 mg/kg, single dose). The group DM+QC received QC (50 mg/kg/week, i.p.) for 11 weeks. At the end of the experimental period (12 weeks), the rats were subjected to echocardiography. Myocardial function was evaluated in LV papillary muscle preparations during isometric contractions. Data were analyzed by ANOVA and *post hoc* Tukey's test ($p < 0.05$). DM reduced body weight (BW) and increased diastolic LV (CTL: 18.0±1.45; DM: 25.8±2.91; DM+QC: 24.4±4.18 mm/kg) and left atrial (CTL: 13.2±0.98; DM: 19.4±2.83; DM+QC: 17.2±2.85 mm/kg) diameters normalized. *In vivo* and *in vitro* contractile function was depressed in both diabetic groups. The *in vitro* study showed impairment of myocardial relaxation (-dT/dt) in the DM group; in the DM+QC group, -dT/dt was not different from CTL (CTL: 17.9±3.37; DM: 14.5±4.99; DM+QC: 19.0±9.81 g/mm^2/s). QC did not attenuate other cardiac alterations induced by DM. Conclusion: Diabetes mellitus impairs *in vivo* and *in vitro* cardiac structure and function. The antioxidant quercetin prevents myocardial relaxation changes in diabetic rats.

Financial Support: Capes, CNPq

Role of Epicatechin in Gastroprotection against Absolute Ethanol in Rats Pre-Treated with L-NAME (N-Nitro-LArginine-Methyl Ester) or NEM (N-Methyl-Maleinide)

Alexandre Tanimoto[1], Ariane L Rozza[1], Bianca B Gregório[1], Clélia A Hiruma-Lima[2], Cláudia H Pellizzon[1]

[1] Morphology Department, Biosciences Institute, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2] Physiology Department, Biosciences Institute, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Tanimoto A, Rozza AL, Gregório BB, Hiruma-Lima CA, Pellizzon CH. Role of Epicatechin in Gastroprotection against Absolute Ethanol in Rats Pre-Treated with L-NAME (N-Nitro-L-Arginine-Methyl Ester) or NEM (N-Methyl-Maleinide). Annu Rev Biomed Sci 2010;12:A73. The aim of this study was to test the gastroprotective effect of epicatechin against gastric ulcers caused by ethanol in rats pre-treated with either NEM, which blocks the non proteic sulfhydryl groups (SH), or L-NAME, which inhibits nitric oxide (NO) sintase, or saline. Male Wistar rats (180-250g) were randomly allocated into six groups (n=7) receiving the following pre-treatment (i.p)/treatments (p.o): saline/vehicle (S/V), saline/epicatechin 50mg/kg (S/E50), L-NAME/vehicle (L/V), L-NAME/epicateE50 (L/E50), NEM/vehicle (N/V) and NEM/E50 (N/E50). After 1 hour, each rat received 1mL of ethanol (99,5%). The animals were euthanized, the stomachs were opened and total lesion areas (mm²) were calculated by *BioviewSpectra*®. The results, given in mean±standard error of the mean, were analyzed by *Instat3*'s unpaired t test and considered significant when $p<0.05$. We observed that ulcer area was statistically increased in the groups pre-treated with NEM compared with the groups pre-treated with saline, where S/V, S/E50, N/V and N/E50 areas were, respectively, 346.12±95.72; 39.91±15.04; 992.08±313.27; and 759.00±224.73. These findings evidence the importance of SH for epicatechin gastroprotective effect. L-NAME, however, did not interfere with the ulceration process when animals were treated with E50. L/V and L/E50 areas were 260.59±51.11 and 81.06±34.17, respectively. Epicatechin treatment also showed a gastroprotective effect in the S/E50 group (39.91±15.04) compared with the untreated group (S/V, 346.12±95.72). In conclusion, epicatechin gastroprotective mechanism does not depend on the presence of NO, but depends on SH availability and protects the stomach against ethanol, even when NO and SH groups are not available.

Financial Support: FAPESP (2008/53798-1 and 2006/55542-9)

Assessment of the Effect of Low Level Laser Therapy on Superficial Respiratory Muscles through Electromyographyc Analysis and Respiratory Evaluation in Moderate Bronchial Asthma

Mariély T Tumasz [1*], Fernanda Ravanello [1], Ana Luiza de Onofre [1], Nathali C Pinto [2], Maria C Chavantes [3], Rina M Magnani [1], Nelson F Serrão-Jr[1]

[1] Physiotherapy Department, UNICENTRO – Midwestern State University; Guarapuava, PR, BRAZIL

[2] Physiotherapy, Pos-Graduation FMUSP - São Paulo University Medical School; São Paulo, SP, BRAZIL

[3] Department of Thoracic-Cardiovasc Surgery, FMUSP – São Paulo University Medical School, São Paulo, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Tumasz MT, Ravanello F, Onofre AL, Pinto NC, Chavantes MC, Magnani RM, Serrão-JR NF. Assessment of the Effect of Low Level Laser Therapy on Superficial Respiratory Muscles through Electromyographyc Analysis and Respiratory Evaluation in Moderate Bronchial Asthma. Annu Rev Biomed Sci 2010;12:A74.
Objective: to evaluate, through surface electromyography (EMG), the effect of Low Level Laser Therapy (LLLT) on the superficial respiratory sternocleidomastoid muscles (ECM) of a volunteer with moderate asthma in order to study the relaxation of the breathing accessory muscles and the possible systemic effect of LLLT. Method: the volunteer abstained from bronchodilators for twenty-four hours before the study (wash-out). She underwent respiratory evaluation (Peak Flow, Spirometry, Index of Perception of Borg Effort (IPE of Borg), Respiratory Frequency (RF), Cardiac Frequency (CF)) and bilateral electromyography analysis of ECM muscles, before LLLT and 30 minutes after its application. Results: electromyographic and respiratory variables, as well as pulmonary function were analyzed before and after the application of LLLT by a paired t test (Student's) and ANOVA. EMG results were: Root Mean Square (RMS) before-LLLT ECM (R) = 2.80 and before-LLLT ECM (L)= 3.52; RMS after-LLLT ECM (R)= 1.49 and after-LLLT ECM (L)= 1.49. Respiratory evaluation showed that Peak Flow before-LLLT= 225L/min and after-LLT=315L/min; RF before-LLLT=20rpm and after-LLLT= 16rpm; CF before-LLLT=88bpm and after-LLLT=77bpm; IPE Borg before-LLLT= 12-13 and after-LLLT= 10-11; Spirometry VEF_1 before-LLLT= 1.79 and after-LLLT= 1.60. Conclusions: respiratory evaluation values and extremely significant EMG values showed that, in this case of moderate asthma, LLLT has a short term effect on ECM muscles, by evidencing a reduction in muscle activity after its application.

[*]Correspondence
Mariély T Tumasz. Fisioterapeuta. Rua José Nunes de Aquino, 147. CEP. 11800000. Juquiá, SP, Brazil.
E-mail: mary_tumasz@hotmail.com

Skeletal Muscle Changes in Spontaneously Hypertensive Rats With Heart Failure

Ricardo L Damatto, Paula F Martinez, Marcelo DM Cezar, Aline RR Lima, Daniele M, Guizoni, Gabriel N Guirado, AA Guimarães, Dijon HS Campos, Silvio A Oliveira-Jr, Antonio C Cicogna, Katashi Okoshi, Marina P Okoshi

Department of Internal Medicine, Botucatu Medical School, UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Damatto RL, Martinez PF, Cezar MDM, Lima ARR, Guizoni DM, Guirado GN, Guimarães AA, Campos DHS, Oliveira Júnior SA, Cicogna AC, Okoshi K, Okoshi MP. Skeletal Muscle Changes in Spontaneously Hypertensive Rats With Heart Failure. Annu Rev Biomed Sci 2010;12:A75. Chronic heart failure (HF) is associated with peripheral skeletal muscles that contribute to fatigue and exercise intolerance. Although the spontaneously hypertensive rat (SHR) has been widely used in HF studies, skeletal muscle changes have not been defined in this HF model. The aim of this study was to evaluate soleus muscle trophism, fibrosis, and myosin heavy chain composition in SHR with HF. Methods: 18-to-24 month-old SHR (n=8) with clinical evidence of HF and age-matched normotensive Wistar-Kyoto rats (WKY, n=9) were studied. The animals underwent transthoracic echocardiography. During euthanasia, the following clinical and pathological features of HF were evaluated: tachypnea/dyspnea, pleuropericardial effusion, ascites, left atrial thrombi, hepatic congestion, and right ventricular hypertrophy. Soleus muscle histological sections were stained with HE and red picro-sirius. Myosin electrophoresis was performed in polyacrylamide gel. Results: The SHR group presented right ventricular hypertrophy and at least two HF features. Left ventricular fractional shortening (WKY 54.7±6.3; SHR 42.1±7.1%; p=0.003) was lower in the SHR group. Body weight (WKY 414±57; SHR 295±29 g; p<0.001), soleus weight (WKY 0.16±0.03; SHR 0.13±0.02 g; p<0.05), and soleus fiber cross sectional areas (WKY 3,614 ± 247; SHR 2,035 ± 240 ì m; p<0.01) were lower in the SHR group. Collagen fractional area was higher in SHR (WKY 2.61±0.39; SHR 4.88±0.98%; p<0.001), and the percentage of myosin heavy chain isoform II was lower in the SHR group (WKY 19.6±3.3; SHR 8.8±3.3%; p=0.003). Conclusion: Chronic heart failure is associated with skeletal muscle atrophy, fibrosis, and myosin heavy chain composition changes in spontaneously hypertensive rats.

Morphometric Studies of Organic Tissues Using the KS 300 Software

Lucas L Cassettari[1], Amanda N Lucchesi[1], Olivia AX Suarez[2], Deilson E Oliveira[3], Antônio JM Cataneo[1], César T Spadella[1*]

[1] Surgery and Orthopaedics Departament, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL
[2] Paediatrics Department, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL
[3] Pathology Department, Botucatu Medical School, UNESP, São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Cassettari LL, Lucchesi AN, Suarez OAX, Oliveira DE, Cataneo AJM, Spadella CT. Morphometric Studies of Organic Tissues Using the KS 300 Software. Annu Rev Biomed Sci 2010;12:A76. Specimens were prepared in glass lamina, and images acquired by a Nikon Microphot – FXA. This microscopy was adjusted with HE + ND2 + ND8 standard filters, with joy stick setup in off line position, and focus on manual usage. Images from lamina were digitalized activating the following steps: ACQUIRE – WINDOW – DISPLAY – LIVE – OK. For analysis of the filled images the following steps: IMAGE – LOAD – FILE UNIT – TIFF FILE – USERNAME – CHOOSE IMAGE – ONE SETUP ON AT THE IMAGE CHOOSEN – PREVIEW – APPLY – OK – WINDOW – DISPLAY. Before performing measurements geometric calibration, measure unit, and parameters to be measured were selected. For performing measurements of perimeters and areas initial sequence was used: SEGMENT – TRESHOLD RGB – COLOR ADJUSTEMENT – APPLY – OK. Then, setup twice on left image to obtain its mask plus OK. To measure region selected was actived: MEASURE – AUTOMATIC. Then, setup twice on right image and select each structure to be measure. A table containing measured parameters was obtained using the sequence: APPLY – OK – EVALUATE – LIST – APPLY – OK – TABLE WITH VALUES – EDIT – COPY – MINIMAZE PAGE – OPEN EXCEL – CONTROL V – TABLE ON EXCEL – SAVE ON HD AND/OR CD. To counting structures the same steps were performed until image mask appear. Then, MEASURE - POINT was actived, and setup on each structure to be counted. Total density of structures was registered by the research in each field analyzed.

Financial Support: FAPESP (2008/56603-7)

[*]**Correspondence**
César T Spadella. Faculdade de Medicina de Botucatu, UNESP, Departamento de Cirurgia e Ortopedia, Distrito de Rubião Jr. CEP 18618-970. Botucatu, SP, Brazil.
E-mail: spadella@fmb.unesp.br

Genotoxicity of the Antineoplastic Drugs Cisplatin and Gemcitabine on Urinary Bladder Cancer Cells

Elaine A Camargo, Glenda N Silva, João Paulo C Marcondes, Daisy MF Salvadori

Department of Pathology, Botucatu Medical School , UNESP – São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

*Camargo EA, Silva GN, Marcondes JPC, Salvadori DMF. Genotoxicity of the Antineoplastic DrugsCisplatin and Gemcitabine on Urinary Bladder Cancer Cells. Annu Rev Biomed Sci 2010;12:A77. The a*ntineoplastic drugs cisplatin and gemcitabine are commonly used to treat bladder cancers. While cisplatin has the ability to crosslink DNA, gemcitabine is incorporated into cellular DNA blocking further elongation of the strand. The present study was designed to evaluate levels of DNA damage in two urinary bladder carcinoma cell lines (5637 and T24) treated with cisplatin (0.5 ì M, 1ì M, or 2ì M), gemcitabine (0.78 ì M, 1.56 ì M or 3.12 ì M), or with combination of both drugs. Cells were collected at 0, 6, and 24 hours after treatment with the chemotherapeutic compounds to evaluate genotoxicity by the comet assay. Increased level of DNA damage (tail intensity) induced by cisplatin was only observed in 5637 cells, 24 hours after exposure to the concentration of 0.5 ì M. For gemcitabine, at the three concentrations (0.78 ì M, 1.56 ì M, and 3.12 ì M), increased DNA damage was detected in both cell lines 6 and 24 hours after exposure. In 5637 cells, higher level of DNA damage was observed at 24 hours compared to 6 hours. Simultaneous treatment with cisplatin and gemcitabine showed statistically significant increase of DNA damage in both cell lines at 6 and 24 hours, except for the 0.5 ì M cisplatin + 0.78 ì M gemcitabine protocol at 6 hours (5637 cells). In conclusion, our data confirm a low sensitivity of the comet assay to detect DNA damage induced by the crosslinking agent cisplatin, and showed the genotoxicity of gemcitabine on mutated *TP 53* bladder cancer cell lines, even when used simultaneously with cisplatin.

Financial Support: FAPESP and CNPq

Dose-Response Study of Diuron Herbicide [3-(3,4-dichlorophenyl)-1,1-dimethylurea] on the Urinary Bladder of Male Wistar Rats

Ana Paula F Cardoso, Mitscheli S Rocha, Shadia M Ihlaseh, Merielen G Nascimento, João LV de Camargo, Maria Luiza CS de Oliveira

Pathology Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Cardoso APF, Rocha MS, Ihlaseh SM, Nascimento MG, de Camargo JLV, de Oliveira MLCS. Dose-Response Study of Diuron Herbicide [3-(3,4-Dichlorophenyl)-1,1-Dimethylurea] on the Urinary Bladder of Male Wistar Rats. Annu Rev Biomed Sci 2010;12:A78. Diuron [3-(3,4-dichlorophenyl)-1,1-dimethylurea] is a substituted urea herbicide widely used on agricultural crops such as soy, cotton and sugar cane. At high dietary concentration, it is carcinogenic to the urinary bladder of rats. The accepted non-genotoxic mode of action of diuron encompasses urothelial cell exfoliation, necrosis induced by urinary precipitates and crystals followed by regenerative cell proliferation and sustained urothelial hyperplasia that may favor neoplasia development. The present study was developed to evaluate a possible dose-response of diuron on lesion development under scanning electron microscopy (SEM) and by histopathological analysis. Six groups of 10 male Wistar rats were fed diuron mixed in the diet at 0, 60, 125, 500, 1250, or 2500 ppm for 20 weeks. Rats were euthanized and all bladders examined by SEM and histology. Histological analysis revealed a dose-response relationship between diuron and the incidence of urothelial lesions, the higher doses induced a significant increase in the incidence of simple hyperplasia. SEM showed that the incidence of lesions was significantly greater in the 1250 and 500 ppm groups than in the control group. Although numerically increased, the incidence of lesions in the 2500 ppm group did not differ significantly from the control. This study documented, both histologically and ultra-structurally, the damaging dose-response action of diuron on the urothelium. Ongoing immunohistochemical and cDNA microarray analyses will provide more information for an improved description of the dose and temporal relationship.

Financial Support: FAPESP (2006/60506-1)

Designing a Risk Profile for Pterygium through an Optimum-Path Forest Analysis Pathway

André F Pagnin[1*], João P Papa[2], Silvana A Schellini[3], Said N Daibes Neto[3]

[1]Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[2]Department of Computing, School of Sciences, UNESP - São Paulo State University, Botucatu, SP, BRAZIL
[3]Department of Ophthalmology, Otolaryngology and Head and Neck, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pagnin AF, Papa JP, Schellini SA, Daibes Neto SN. Designing a Risk Profile for Pterygium Through an Optimum-Path Forest Analysis Pathway. Annu Rev Biomed Sci 2010;12:A79. Pterygium is characterized by a fibrovascular tissue growth from the bulbar conjunctiva over the cornea, and its pathogenesis is presently uncertain. Many environmental factors such as ultraviolet irradiation, chronic irritation, and inflammation have been postulated to be causative factors, but its pathogenisis remains poorly understood. The prevalence of the lesion is variable worldwide and can increase in tropical and equatorial regions, and on some islands. Therefore, it is difficult to build a profile of individuals that have high probability to be affected by this disease. In this work we have used a pattern recognition technique to automatically recognize pterygium using a predetermined set of features in a dataset containing 7651 patients. This study was carried out through a recently developed pattern recognition technique called Optimum-Path Forest (OPF). In the experimental results, we used 50% of the whole dataset for training and the remaining one for testing OPF. We have executed this experiment 10 times with different randomly generated training and test sets in order to determine mean accuracy and standard deviation computations. This approach for pterygium identification obtained 93.08% of right classifications. This work is the first to apply OPF in this field and, as far we know, the first to present an artificial intelligence-based approach for automatic pterygium identification.

[*]**Correspondence**
André F Pagnin. Faculdade de Medicina de Botucatu, UNESP. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brazil.

E-mail: afpagnin@fmb.unesp.br

Chromosome Damage in Macroscopically Normal Urothelium from Patients with a History of Transitional Cell Carcinoma

João PC Marcondes, Maria Luiza CS Oliveira, Álisson MMC Gontijo, João LV de Camargo, Daisy MF Salvadori

Department of Pathology, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Marcondes JPC, Oliveira MLCS, Gontijo AMMC, de Camargo JLC, Salvadori DMF. Chromosome Damage in Macroscopically Normal Urothelium from Patients with a History of Transitional Cell Carcinoma. Annu Rev Biomed Sci 2010;12:A80. The main feature of the transitional cell carcinoma (TCC) is a high recurrence rate (70% to 80%). Therefore, the use of sensitive techniques for early detection of the disease is extremely relevant. In this context, we used the micronucleus assay to evaluate whether cytogenetic disorders could be a good biomarker for monitoring TCC development and recurrences. The micronucleus frequency was established in exfoliated urinary bladder cells, obtained by intravesical instillation of 0.9% saline solution from 105 patients with (52) and without a (53) history of TCC, either smokers or non-smokers, but without current evidence for disease. Conventional MN staining (Giemsa) and fluorescence *in situ* hybridization (FISH) for centromeres of all human chromosomes were performed, in order to evaluate the frequency of micronucleated exfoliated cells, and to address the mechanism involved in the micronucleus formation. The results showed a significant increase ($P<0.01$) of MNC in patients with a TCC history, with no difference between smokers and non-smokers. The data also showed a higher number of micronuclei from chromosome fragments than from whole chromosome in the patients with a TCC history ($P<0.01$). In conclusion, the data demonstrate that chromosome damage is an important early step in urothelial carcinogenesis, independent of smoking habits. Furthermore, it seems that these genetic abnormalities occur more frequently by chromosome breakage than by chromosome missegregation, and suggests that they could be related to urothelial genomic instability. Thus, the MN test could aid in monitoring subjects at risk for or with a history of TCC, and with a macroscopic diagnosis of normal urothelium.

Financial Support: FAPESP (2005/55594-6); CNPq (305815/2006-7)

Effectiveness of Physiotherapy in Obstetrics -Encouraging Vaginal Birth and Breastfeeding

Mikaela S Corrêa

Centro-Oeste State University – UNICENTRO, Guarapuava, PR, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Corrêa MS. Effectiveness of Physiotherapy in Obstetrics -Encouraging Vaginal Birth and Breastfeeding. Annu Rev Biomed Sci 2010;12:A81. This study aimed at assessing the physical benefits offered by physiotherapy in vaginal birth and breastfeeding. We evaluated 19 women who were participating in the extension project "The work of Physiotherapy in Obstetrics, encouraging a humane care and breastfeeding," developed in city of Guarapuava, PR, at São Cristovão Health Center - PSF. After gynecological evaluation, participants recieved individual care, according to the characteristics evaluated. The practice of physical therapy included perineal muscle strengthening and global muscle exercises, stretching, muscle relaxation, and breathing exercises. Lectures and leaflets were offered to the participants in order to encourage breastfeeding, provide clarifications on types of delivery, breast-feeding preparation and proper postures while sitting, sleeping and feeding. All pregnant women attended biweekly meetings until the 9th month of pregnancy. Further evaluations were performed in the first week and third month of puerperium. All participants chose vaginal delivery, which was possible in 68.5% of them. Vaginal delivery did not occur in the presence of complications such as insufficient cervix, breech fetal position, umbilical and arterial hypertension. All the women breastfed, and only one baby had pneumonia due to milk aspiration until the last evaluation. Obstetric Physiotherapy played an important role both in the physical improvement of pregnant woman during birth, and in the guidance about breastfeeding and care of newborns, promoting mother and baby health.

Assessment of Stress and Coping in Mothers of Children with Congenital Heart Disease

Dóris SB Souza[1], Antonio S Martins[2], Maria C Miyazaki[3], Ulisses A Croti[4]

[1] Specialized Nursing Department, São José do Rio Preto Medical School, FAMERP - São Paulo State University, BRAZIL
[2] Surgery Department, Botucatu Medical School, UNESP - São Paulo State University; BRAZIL
[3] Psychology Department, São José do Rio Preto Medical School, FAMERP - São Paulo State University, BRAZIL
[4] Surgery Department, São José do Rio Preto Medical School, FAMERP - São Paulo State University, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Souza DSB, Martins AS, Croti UA, Miyazaki MC. Assessment of Stress and Coping in Mothers of Children with Congenital Heart Disease. Annu Rev Biomed Sci 2010;12:A82. Study objectives: to assess stress and coping in mothers of children with congenital heart disease who had undergone surgery; to associate coping style, stress, mothers age, and heart disease. Methods: Sixty mothers whose children had undergone surgery for congenital heart disease filled the Lipp Stress Symptoms Inventory for Adults, and the Ways of Coping Scale. Results: most mothers were in the resistance stage of stress. Psychological symptoms of stress were predominant and the most used coping strategy was religion. Chi-square test showed no association (pd"0.05) between heart disease and coping style ($p = 0.840$), heart disease and stress stage ($p = 0.675$), stress stage and coping ($p = 0.375$), stress and age, and coping and age. The presence of stress in the resistance stage in most participants indicates the need for professional intervention from diagnosis until the discharge after surgery, to favor positive coping strategies and a better quality of life for mother and child.

*Correspondence
Dóris SB Souza. Faculdade de Medicina de São José do Rio Preto, FAMERP, Departamento de Enfermagem Especializada, Avenida Brigadeiro Faria Lima, 5416 CEP: 15091300. São José do Rio Preto, SP, Brazil.

GST-P+ Liver Foci Induced by Diethylnitrosamine (DEN) in Male Lewis and Wistar Rats - Comparison between Two Strains

Viviane M Pascotto, Carla AS Franchi, Ana Paula F Cardoso, Meire F Martinez, João LV de Camargo*

Pathology Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Pascotto VM, Franchi CAS, Cardoso APF, Martinez MF, de Camargo JLV. GST-P+ Liver Foci Induced By Diethylnitrosamine (DEN) In Male Lewis And Wistar Rats - Comparison Between Two Strains. Annu Rev Biomed Sci 2010;12:A83. The liver has been widely used as target organ in different alternative bioassay systems designed to identify initiating and promoting chemical carcinogens. A particular initiation-promotion bioassay established in the male F344 - the Ito's model - uses DEN as the initiating agent and the development of immunohistochemically detected GST-P+ AHF (altered hepatocytes foci) as the end point. However, the F344 strain of rats is scarcely available in Brazil. Two different rat strains were investigated for susceptibility to the initiating potential of DEN. Specifically, Lewis and Wistar rats from local stocks were compared regarding their respective susceptibilities to develop DEN-induced GST-P+ AHF. Male rats of each strain were allocated to two experimental groups: G1 received a single i.p. injection of 0.9% NaCl; G2 received a single DEN i.p. injection (200 mg/kg) dissolved in saline to initiate hepatocarcinogenesis. All rats were submitted to partial hepatectomy at the 3rd week and fed a basal diet during 6 weeks when they were euthanized. Both DEN-initiated strains developed significantly more GST-P+ AHF when compared to the respective controls. Lewis rats showed significantly more and smaller areas of AHFs when compared to the Wistar strain. There are indications that foci number is related to initiation (corresponding to the number of initiated cells) and that the size of foci (area) relates to the promotion process. The Lewis strain showed a higher susceptibility to the DEN initiating potential. Since this isogenic strain is available in Brazil, it can be conveniently used in the Ito's bioassay for hepatocarcinogenesis.

Immunogenic Potential of Bioactive Dressings: Immunohematological, Leukocytic, and Platelet Characteristics

Financial Support: FAPESP (06/60506-1 and 06/60508-0)

***Correspondence**

João LV de Camargo. Faculdade de Medicina de Botucatu, UNESP, Departamento de Patologia. Distrito de Rubião Jr. CEP. 18618000. Botucatu, São Paulo – Brazil.

E-mail: decam@fmb.unesp.br

Maira C Félix[1], Danielle C Flora[1], Daniel B Jesuino[2], Elenice Deffune[2], Rosana Rossi-Ferreira[3]

[1] State Hospital of Bauru – UNESP, Bauru, SP, BRAZIL
[2] Botucatu Blood Center – Botucatu Medical School – UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Félix MC, Flora DC, Jesuino DB, Deffune E, Rossi-Ferreira R. Immunogenic Potential of Bioactive Dressings: Immunohematological, Leukocytic, and Platelet Characteristics. Annu Rev Biomed Sci 2010;12:A84.
Chronic degenerative diseases are characterized by a slow, progressive evolution and long latency period. They result in cellular changes that facilitate the development of venous and/or ischemic ulcers. K antigen of the Kell erythrocyte system constitutes a powerful bioactive peptide that directly influence vascular diseases. Activated platelets release growth factors that accelerate the healing process. Platelet membranes express antigens such as erythrocyte, polymorphic HLA class-I and specific platelet antigen (HPA). The Biotechnology Division of Botucatu Blood Center has developed gel dressings employed to accelerate tissue repair using an excess of platelets and homologous plasma as active components. Exposure to HPA may lead to a humoral immune response because of its high genetic variability. The objective of the study was to evaluate the immunogenic potential of these dressings in patients. A multicenter study was performed in which a total of 198 patients were phenotyped for the presence of Kell antigen. One-hundred were selected for evaluation of the relationship between ABO and Rh erythrocyte systems, the healing process, and alloimmunization against erythrocyte antibodies. Thirty-eight patients were selected for evaluation of the immunogenic potential of leukocyte, and platelets antibodies search. Our results show that the Kell antigen may be a possible predictive marker of poor outcome of chronic ulcers. Further, we can infer that the exposure in these patients to highly immunogenic antigens led only to alloimmunization against HPA, though with a prevalence lower than that by intravenous transfusion of platelet concentrate, supporting its beneficial effects on chronic multifactor wound healing.

The Effect of Low-Level Laser in a Patient with Chronic Obstructive Pulmonary Disease During Respiratory Therapy – Case Study

Simone Libardi[1*], Allison G Braz [1], Nelson F Serrão-Jr[2], Kelly C Affonso[1], André C Matias[1]

[1]Departamento de Fisioterapia, Universidade Estadual do Centro Oeste, UNICENTRO, Guarapuava, PR, BRAZIL

[2]Departamento de Clínica Médica, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista, UNESP, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Libardi S, Braz AG, Serrão-Jr NF, Affonso KC, Matias AC. The Effect of Low-Level Laser in a Patient with Chronic Obstructive Pulmonary Disease During Respiratory Therapy – Case Study . Annu Rev Biomed Sci 2010;12:A85. Nowadays, it is very important researches of new approaches for treatment of lung diseases. These studies can improve the recovery of patients with chronic obstructive pulmonary disease (COPD). The aim of this study was to evaluate the effects of low-level laser (LLL) on respiratory muscles in a patient (case study) with COPD. The volunteer underwent a physical therapy evaluation consisting of history taking, physical examination and spirometric evaluation. The inclusion criterion was predicted Forced Expiratory Volume in 1 second (FEV1) <80%. Surface electromyography (EMG) was performed on muscles: sternocleidomastoid (SCM) scalene, external intercostal and rectus abdominis. The electrodes were positioned according to the rules of the Senian second map SEMG-Muscle Chart unilateral right side. LLL was applied on the same muscle and the electrodes were adjusted so as not to be taken for ensuring the application the same position to evaluate EMG after LLL. A wavelength of 830 nm, power 25mW was used for 7 seconds, three points with a distance of 1 cm between each point. EMG was performed before and fifty minutes after LLL application. EMG results in the first 10 seconds in the last 10 seconds were, respectively, a decrease of RSM by 87.25% and 89.57% in SCM, 1.55% and 3.44%. In the scalene, 85.72% and 54 49% in the external intercostal and 82.48% and 36.70% in the rectus abdominis. We could see the significant values of the EMG the effect of LLL in the short-term respiratory muscles, showing a decrease in muscle activity in patients with COPD.

Financial Support: FAPESP (2003/13268-0)

Expression of Toll-like Receptor-2 and -4 in Chorioamniotic Membranes of Pregnancies Complicated by Chorioamniotis

Natália P Moço[1], Jossimara Polettini[1], José C Peraçoli[2], Kunie IC Rabello[1], Márcia G Silva[1*]

[1]Pathology Department, Botucatu Medical School, UNESP - São Paulo State University; Botucatu, SP, BRAZIL

[2]Gynecology and Obstetrics Department, Botucatu Medical School, UNESP - São Paulo State University, Botucatu, SP, BRAZIL

5th Graduation Meeting - Botucatu Medical School, UNESP, 03-05 December 2009

Abstract

Moço NP, Polettini J, Peraçoli JC, Rabello KIC, Silva MG. Expression of Toll-like Receptor-2 and -4 in Chorioamniotic Membranes of Pregnancies Complicated by Chorioamniotis. Moço NP, Polettini1 J, Peraçoli JC, RabelloKIC, Silva MG. Annu Rev Biomed Sci 2010;12:A86. Histological chorioamnionitis occurs, in most cases, with the absence of infection symptoms, and this diagnosis can be made in more than 50% of preterm births. The innate immune system constitutes the host's first line of defense against pathogens and, in this regard, Toll-like receptors (TLR) are regulators of this innate response This study aimed to investigate the expression of TLR-2 and TLR-4 in chorioamniotic membranes of pregnancies complicated by chorioamnionitis. Forty-eight membranes were analyzed. Such membranes were collected from pregnant women presenting with preterm premature rupture of membranes (PPROM), preterm labor (PTL) or term pregnancy (TP) and who were attended at the Botucatu Medical School, UNESP. Fragments of the membranes were sent for histopathological analysis. Other fragments were subjected to total RNA extraction. RNA samples were reverse transcribed using High Capacity cDNA and the quantification of TLR-2 and TLR-4 expression measured by the real-time PCR technique. All the chorioamniotic membranes expressed TLR-2 and TLR-4, and the relative concentration of TLR-4 mRNA, in relation to the concentration of TLR-2 mRNA, was significantly increased in the presence of chorioamnionitis ($p<0.05$). However, no difference was observed in the relative concentrations of TLR-2 and TLR-4 mRNAs in the presence of chorioamnionitis when membranes with or without inflammatory infiltrates were compared. No difference was also found in the expression of these two TLRs, in the presence or absence of chorioamnionitis, when comparing preterm and term pregnancies. The chorioamniotic membranes express TLR-2 and TLR-4, and such expression is not modulated by the presence of histological chorioamnionitis.

Financial Support: FAPESP (2008/53382-0 e 2008/55418-1)

* **Correspondence**

Márcia G Silva. Faculdade de Medicina de Botucatu, UNESP, Departamento de Patologia. Distrito de Rubião Jr. CEP. 18618970. Botucatu, SP, Brasil.

E-mail: mgsilva@fmb.unesp.br