LIVRO DE RESUMOS

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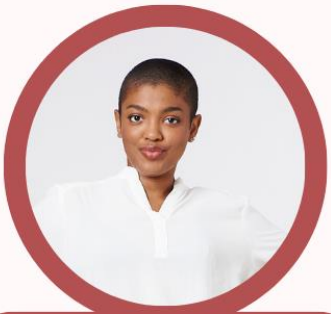

Maria Emanuelle

Stella Rocha

COMISSÃO CIENTÍFICA

Ademir Batista da Cunha

Possui Doutorado e Mestrado em Medicina (Cardiologia) pela Universidade Federal do Rio de Janeiro (2000 e 1989 respectivamente). É Professor Titular da disciplina de Cardiologia da Universidade Federal Fluminense e Pesquisador do Instituto Nacional de Cardiologia(INC). Tem experiência na área de Medicina, com ênfase em Cardiologia, atuando principalmente nos seguintes temas: Hipertensão Arterial, Doença de Chagas, Terapia Celular, Doença Arterial Coronária, e Eletrocardiografia.

Caroline Fernandes dos Santos Bottino

Possui graduação em Ciências Biológicas (Licenciatura e Bacharelado/UERJ), Mestrado em Morfologia (UERJ), Doutorado em Biologia Humana e Experimental (UERJ), com período sandwich na The University of Iowa (USA), Especialização em A Moderna Educação (PUCRS) e em Educação Transformadora (PUCRS). Atualmente é Professora Associada I de Neurociências e Neurobiologia da Universidade Federal Fluminense (UFF)/ Instituto de Saúde de Nova Friburgo e professora permanente do Programa de Pós-Graduação em Ciências Cardiovasculares (UFF). Desenvolve trabalhos no eixo ensino-pesquisa-extensão, sendo líder do grupo de pesquisa NEMENUTH - Núcleo de Estudos em Metabolismo Nutrição e Histopatologia (UFF), vice-líder do EDU-INOVA - Núcleo de Estudos em Educação e Inovação(UFF) e membro do PROIAC - Programa de Inovação e Assessoria Curricular (UFF). Atua nas seguintes áreas: difusãoda ciência, métodos ativos de ensino e aprendizagem, tecnologias digitais na educação, promoção da saúde e doenças cardiometabólicas.

Christianne Brêtas Vieira Scaramello

Possui mestrado e doutorado em Farmacologia Terapêutica e Experimental pela UFRJ. Tem experiência na área de Farmacologia, tanto básica como clínica, Farmacocinética, Farmacovigilância e Plasticidade do Desenvolvimento. Mais recentemente iniciou estudos abrangendo a aplicação de diferentes estratégias de Reposicionamento de fármacos com abordagem centrada nas doenças. Atuou como professora de Farmacologia Básica e Clínica nos cursos de Medicina e Farmácia em conhecidas instituições de ensino superior como Universidade Estácio de Sá, UNIGRANRIO e Fundação Técnico Educacional Souza Marques, antes do ingresso na UFF, onde atualmente é professora associada IV. Coordenou a implantação do Centro de Informações sobre Medicamentos da UNIGRANRIO. Tem experiência na orientação de alunos de iniciação científica e tecnológica - inclusive ensino médio - mestrandos e doutorandos, bem como na supervisão de pesquisadores pós-doutorais, com produção científica compatível. É vice coordenadora do Programa de Pós-Graduação em Ciências Cardiovasculares desde 2013 e faz parte do comitê gestor do Setor de Apoio Institucional a Projetos do Biomédico e do comitê assessor de pesquisa da Proppi. Além de revisora de periódicos, é editora associada da área multidisciplinar do periódico International Journal of Cardiovascular Sciences. É idealizadora e coordenadora do projeto de extensão abrangendo divulgação científica denominado Science Rocks UFF e orienta alunos de monitoria na disciplina de Farmacologia para o curso de Medicina. Atualmente também coordena o projeto de tutoria e colabora com o projeto de mentoria vinculados ao mesmo curso. Ao todo orienta 4 alunos de doutorado, 1 de mestrado e 6 de iniciação científica em diferentes linhas de pesquisa. É líder do Núcleo de Pesquisa em Plasticidade, Epidemiologia e Estudos In Silico (NUPPEESI) registrado no diretório do CNPq.

Gabrielle Mendes Lima

Possui graduação em Farmácia pela Universidade Tiradentes (2006), Mestre em Ciências Farmacêuticas (2010) e Doutorado em Ciências da Saúde (2014) pela Universidade Federal de Sergipe. Atualmente é Professora Adjunta II na Faculdade de Medicina da Universidade Federal de Roraima, lecionando a matéria de Farmacologia Clínica e Professora do Programa de Pós-Graduação em Saúde e Biodiversidade/PPGSBio. Atua nas linhas de pesquisa de Química e Farmacologia de produtos naturais, Farmacologia da Dor e inflamação, Biomateriais, células-tronco e terapia celular.

Gabrielle de Souza Rocha

Graduada em Nutrição pela Universidade do Estado do Rio de Janeiro (UERJ / 2000), mestre em Fisiopatologia Clínica e Experimental pela Universidade do Estado do Rio de Janeiro (UERJ / 2003) e Doutora em Ciências da Saúde pela Universidade Federal do Rio Grande do Norte (UFRN / 2010). Atualmente é Professora Associada II da Universidade Federal Fluminense (Faculdade de Nutrição / UFF) e em exercício provisório na Universidade Federal de Roraima (curso de graduação em enfermagem / UFRR), coordenadora do Internato do curso de enfermagem da UFRR, professora do programa de pós-graduação em ciências cardiovasculares (UFF), professora da Residência Multiprofissional (REMU, eixo específico, nutrição / UFF), professora do Programa de pós-graduação em Saúde e Biodiversidade (PPGSBio / UFRR). Especialização em Gestão de Programas de Residência em Saúde do SUS - GPRS (em andamento).

Julio Cesar Fraulob Aquino

Graduação em Nutrição pela Universidade do Estado do Rio de Janeiro (UERJ-2006). Especialista em Nutrição Clínica pela Associação Brasileira de Nutrição (2012). Mestrado em Biologia Humana e Experimental pela UERJ (2008) e Doutorado em Ciências da Saúde pela UERJ (2011). Atua na área de Avaliação Nutricional, Nutrição Clínica e Doenças Cardiovasculares, com ênfase em Dietética, Nutrição em Hipertensão e Diabetes. Tem experiência na área de Morfologia e Biologia Molecular e Celular, com ênfase em Estereologia, Morfometria e Miografia atuando nos seguintes temas: resistência à insulina, síndrome metabólica e nutrição experimental. Atualmente atua na área de pesquisa em hipertensão arterial com ênfase em remodelamento vascular, disfunção endotelial, rigidez arterial e cardiometabolismo. Professor Adjunto em Dedicação Exclusiva do Curso de Medicina (área: Nutrição) da Universidade Federal de Roraima - UFRR. Realizou pós-doutorado no Lady Davis Institute for Medical Research (LDI) no Jewish General Hospital (JGH), McGill University (Montrel, CA), 2013-2017.

Luiz Carlos Pacheco Rodrigues Velho

Luiz Velho is a Full Researcher / Professor at IMPA - Instituto de Matematica Pura e Aplicada of CNPq , and the leading scientist of VISGRAF Laboratory. He received a BE in Industrial Design from ESDI / UERJ in 1979, a MS in Computer Graphics from the MIT / Media Lab in 1985, and a Ph.D. in Computer Science in 1994 from the University of Toronto under the Graphics and Vision groups. His experience in computer graphics spans the fields of modeling, rendering, imaging and animation. During 1982 he was a visiting researcher at the National Film Board of Canada. From 1985 to 1987 he was a Systems Engineer at the Fantastic Animation Machine in New York, where he developed the companys 3D visualization system. From 1987 to 1991 he was a Principal Engineer at Globo TV Network in Brazil, where he created special effects and visual simulation systems. In 1994 he was a visiting professor at the Courant Institute of Mathematical Sciences of New York University. He also was a visiting scientist at the HP Laboratories in 1995 and at Microsoft Research China in 2002. He is an innovator and entrepreneur. His pioneering work produced the first computer-animated film in Brazil (1979). He also created various inventions for which he is the patent holder. He founded the following companies that introduced new media related technologies in the country: Tele-Cine Maruim - for computer animation (1983); GrafTex - for electronic publishing (1994); and Cybernet - an Internet provider (1995). He has published extensively in conferences and journals of the area. He is the author of several books and has taught many courses on graphics-related topics. He is a member of the editorial board of various technical publications, and was the guest editor of the Special Issue on Computer Graphics of JBCS and of Computer & Graphics . He has also served on numerous conference program committees. His awards include the "Ordem Nacional do Merito Cientifico", a Honors Prize in the II Compaq Award for Computer Science and Prizes for Best Technical Videos and Best Papers at SIBGRAPI. In 1996 he was the Program Chair of the IX SIBGRAPI . He was distinguished as the first researcher in South America to be on the SIGGRAPH Papers Committee, in 1999. He served in the SIGGRAPH Papers Committee also in 2000, 2002 and 2003. He was a member of the Eurographics IPC in 2008. He received the prestigious grant award "Cientista do Nosso Estado" from FAPERJ in 2004, 2007 and 2009. He has been a Keynote Speaker in several conferences, including SGP 2005, CNMAC 2006, the SBPC Congress 2006, SIBGRAPI 2007, ISMM 2007, WVC 2010 and VFX 2015, VFX 2018, VFX 2019, VFX online 2020, VFX online 2021.

Nícia Pedreira Soares

É residente pós-doutoral no laboratório de Hipertensão da Universidade Federal de Minas Gerais (UFMG), possui pós-doutorado pela universidade Federal de Ouro Preto (CBIOL- UFOP, 2022-2023), doutorado em fisiologia (PGFISFAR-UFMG, 2016-2021), mestrado em ciências biológicas com ênfase em Bioquímica Metabólica e Fisiológica pela UFOP (CBIOL-UFOP, 2013- 2016) e graduação em nutrição (UFOP, 2008-2013). Tem experiência em pesquisa científica em imunologia, fisiologia, farmacologia e bioquímica nos seguintes temas: Sistema renina-angiotensina, disbiose intestinal, obesidade, ansiedade, compulsão, dieta rica em carboidratos, neuroinflamação, inflamação pulmonar, desequilíbrio redox, hiperóxia. Tem experiência em atendimento nutricional com foco principal em pacientes portadores de obesidade e suas comorbidades.

Ronaldo Gismondi

Professor de Clínica Médica da Universidade Federal Fluminense. Possui graduação em Medicina pela Universidade Federal Fluminense (2002), residiência médica em Clínica Médica (UFRJ) e Cardiologia (Insitituto Nacional de Cardiologia), Mestrado em Medicina pela Universidade do Estado do Rio de Janeiro (2009) e Doutorado em Medicina pela Universidade do Estado do Rio de Janeiro (2015). Tem experiência na área de Medicina, com ênfase em Cardiologia e Clínica Médica.

Thereza Bargut

Nutricionista formada pela UERJ e Doutora em Ciências pelo PPG em Biologia Humana e Experimental (UERJ). Foi bolsista de pós-doutorado (FAPERJ) no Laboratório de Morfometria, Metabolismo e Doença Cardiovascular (UERJ). É Professora Adjunta da disciplina de Anatomia Humana no Departamento de Ciências Básicas, no Instituto de Saúde de Nova Friburgo (ISNF/UFF) e Docente Permanente do PPG em Ciências Cardiovasculares (UFF). Tem experiência na área de Nutrição Experimental, atuando nos seguintes temas: óleo de peixe, ácidos graxos poli-insaturados n-3, óleos dietéticos, síndrome metabólica, obesidade, tecido adiposo marrom, termogênese, tecido adiposo branco e programação metabólica. Pesquisadora dos grupos de pesquisa "Núcleo de Estudos em Metabolismo, Nutrição e Histopatologia (NEMENUTH)" e "Núcleo de estudos em educação e inovação (EDU-INOVA)", ambos da UFF. Jovem Cientista do Nosso Estado (2023 - 2025). Atua na coordenação de projetos de extensão vinculados à Educação e Popularização de CT.

Thiago Gomes Heck

Formação: Graduação em Educação Física pela Universidade Federal do Rio Grande do Sul (UFRGS-2004), Especialização em Docência no Ensino Superior pela Universidade de Caxias do Sul (2020), Mestrado em Ciências Médicas (Farmacologia e Terapêutica Clínica) pela Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA-2007) e Doutorado em Ciências do Movimento Humano pela Universidade Federal do Rio Grande do Sul (UFRGS-2011). Atuação Profissional destaque: Membro do Comitê Assessor da área de Ciências da Saúde da Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul (FAPERGS) (2013-2015); Coordenador do Programa de Pós-Graduação em Atenção Integral à Saúde (Stricto Sensu) (PPG em associação UNICRUZ/UNIJUI) (2015-2022); Vice-Coordenador da Comissão de Ética no Uso de Animais (CEUA) da UNIJUÍ (2015-2017); Editor Chefe da Revista Contexto e Saúde. (2014 -2020); Líder do Grupo de Pesquisa em Fisiologia (GPeF) da UNIJUÍ. (www.gpef-unijui.com) (2013-atual); Docente permanente do Pós-Graduação em Atenção Integral à Saúde (2014 - atual) e do Programa de Pós-Graduação em Modelagem Matemática e Computacional (outubro-2020 -Atual). Disciplinas ministradas no PPG em Atenção Integral à Saúde: Pesquisa em Saúde I (regência); Bases Fisiológicas do Exercício para Populações Especiais (regência); Experimentação em Modelos Animais (regência), Atividade Física e Exercício Físico para Populações Especiais (Regência); Comunicação Científica Escrita (regência); Tópicos Especiais em COVID-19 (regência); Biomarcadores Celulares e Moleculares das Populações (participação); Ensaios Químicos e Biológicos Aplicados à Saúde (participação); Disciplinas em Cursos de Especialização: Bioestatística. Disciplinas na Graduação: Anatomia Humana; Fisiologia Humana (Educação Física); Fisiologia e Anatomia Humana Integradas I e II (Fisioterapia, Biomedicina, Farmácia, Nutrição e Enfermagem); Bases Morfofisiológicas dos Sistemas Locomotor, Nervoso e Tegumentar (Medicina); Bases Morfofisiológicas dos Sistemas Cardiovascular, Hematopoiético, Respiratório e Gastrintestinal (Medicina). Temáticas de Pesquisa: Investiga os processos químicos e biológicos envolvidos no processo saúde-doença. As atividades de pesquisa concentram-se no estudo de biomarcadores, com foco na investigação do papel das proteínas de choque térmico (HSPs, heat shock proteins) em condições de saúde e doença e sua relação com o estado redox (estresse oxidativo), status inflamatório e quadro metabólico do organismo, em modelos in vitro, modelos animais e com humanos. Investiga o uso das HSPs como biomarcador em processos fisiológicos (resposta imune, defesas celulares e controle glicêmico), fisiopatológicos (diabetes mellitus tipo 2 e aterosclerose) e terapêuticos (exercício físico, terapia térmica, jejum intermitente e suplementação com aminoácidos) e a exposição a desafios ambientais (poluição atmosférica, agrotóxicos, temperatura). Membro Efetivo da Sociedade Brasileira de Fisiologia SBFis (2014-atual), American Physiological Society (2011-atual), Membro da Cell Stress Society International desde 2012, tornando-se o primeiro Brasileiro membro vitalício desta sociedade a partir de 2021 (Lifetime Member). Editor Acadêmico da Revista PLoS ONE, Editor convidado dos periódicos Journal of Diabetes Research e Oxidative Medicine and Cellular Longevity Índice H=17 (814 citações WoS); Índice H=16 (932 citações Scopus); Indice H-20, 1518citações (Google Schoolar).

PROGRAMAÇÃO

05 DE DEZEMBRO DE 2023: Remoto e Síncrono

Link: (https://www.youtube.com/live/eGoj6pbHVjY?si=tepLuAA7mgVMPVDc)

- ✓ **16:00 às 17:00 – Mesa Redonda I: "Dieta DASH: além do controle da hipertensão arterial."**

Palestrante - Dra. Dra. Alessandra da Rocha Pinheiro Mulder
Subtítulo da Palestra: Aplicação da dieta DASH na abordagem nutricional do indivíduo obeso

Palestrante - Dra. Vanessa dos Santos Pereira Montera
Subtítulo da Palestra: O papel da dieta DASH nos processos de inflammaging e senescência vascular

Mediadores: Gabrielle Rocha e Grazielle Huguenin

- ✓ **17:00 às 18:00 – Mesa Redonda II: "Abordagens do sistema renina-angiotensina (SRA) no tratamento da obesidade e doenças cardiovasculares."**

Palestrante - Dr. Robson Augusto Souza dos Santos
Subtítulo da Palestra: Novos peptídeos do SRA na obesidade e doenças cardiovasculares

Palestrante - Dra. Nícia Pedreira Soares
Subtítulo da Palestra: O papel da microbiota intestinal como alvo do SRA na obesidade e doenças cardiovasculares

Palestrante - Dra. Cristiane Aguiar da Costa
Subtítulo da Palestra: Perspectivas terapêuticas do caroço do açaí no SRA, obesidade e doenças cardiovasculares

Mediadores: Beatriz Alexandre e Eliete Frantz

✓ **18:00 às 19:00 – Palestra**

Palestrante - Vinicius D'Ávila Bitencourt Pascoal

Subtítulo da Palestra: Aplicações da Tecnologia de microRNAs em Saúde

Mediadores: Giovani Carlo e Erito Marques

✓ **19:00 às 20:00 – Mesa Redonda III: ““Exercício físico como estratégia metodológica e terapêutica .”**

Palestrante - Igor Alexandre Fernandes

Subtítulo da Palestra: Cardiovascular responses to exercise: a journey that starts in the contracting skeletal muscle

Palestrante - Wallace Machado Magalhães de Souza

Subtítulo da Palestra: A importância da força muscular para o paciente com Insuficiência Cardíaca

Mediadores: Helena Miguens e João Dario

PROGRAMAÇÃO

06 DE DEZEMBRO DE 2023: Presencial Bloco E do Instituto Biomédico da UFF

- ✓ **16:00 às 18:00 – Comunicações orais (Auditório 2º andar)**

Identificação do trabalho	Relator	Título do trabalho
R004	Aretha Pereira de Oliveira	IMPACT OF DAY AND NIGHT BED BATH ON GLYCEMIC VARIATION OF CRITICAL CARE PATIENTS WITH SEPSIS
R006	Victor Oliveira Meira	CONSUMPTION OF FOOD RELATED TO CARDIOVASCULAR HEALTH BY OBESE INDIVIDUALS IN THE SOUTHEAST REGION OF BRAZIL DURING THE COVID-19 PANDEMIC
R011	Nathan Correa Assis	IN SILICO PROPOSAL TO IMPROVE ANTIRETROVIRAL THERAPIES BASED ON NETWORK MEDICINE AND DRUG REPOSITIONING
R014	Juliana Arruda da Silva Monnerat	VASCULAR RESPONSE ON OFFSPRING OF WISTAR RATS SUBMITTED TO PRENATAL STRESS AND AEROBIC TRAINING
R025	Camila Oliveira Freitas	EFFECTS OF SUBACUTE EXPOSURE TO TRIBUTYLTIN CHLORIDE ON CARDIAC FUNCTION IN WISTAR RATS
R028	Flavio Andrade Camacho	PHASE ANGLE ASSESSMENT IN HEART FAILURE: A PROMISING APPROACH FOR NUTRITIONAL ASSESSMENT
R030	Felipe Costa de Souza	ASSESSMENT OF INFLAMMATORY MARKERS, MITOCHONDRIAL DNA, CARDIOVASCULAR RISK FACTORS AND EVENTS IN INDIVIDUALS ABOVE 50 SUBMITTED TO DIFFERENT ANTIRETROVIRAL THERAPIES

✓ **18:00 às 19:00 – Sessão de Pôsteres - Lote 1 (Corredor 2º andar)**

Identificação do trabalho	Relator	Título do trabalho
R001	Danton Machado da Cunha	ECHOCARDIOGRAPHIC MARKERS OF CLINICAL EVOLUTION IN CHRONIC CHAGAS CARDIOMYOPATHY
R002	Lin Shr Uen	PROFESSOR'S AND STUDENT'S MENTAL HEALTH DURING AND AFTER THE COVID-19 PANDEMIC IN A FEDERAL PUBLIC UNIVERSITY
R003	Ana Beatriz Proença Souza	PLASTICITY OF ADIPOSE TISSUE IN OBESE ANIMALS: EFFECTS OF GENETIC DELETION OF THE MrgD RECEPTOR AND ANGIOTENSIN (1-7)
R005	Flavia Valeria dos Santos Almeida	WARFARIN PHARMACOVIGILANCE: PROPOSAL OF AN IMPROVED TRIGGER TOOL METHOD
R007	Karyne Pollo de Souza	*IN SILICO* DRUG REPURPOSING STUDY TO MITIGATE CARDIAC, RESPIRATORY, AND RENAL COMPLICATIONS OF COVID-19 CONSIDERING GENDER DIFFERENCES
R009	Andressa Brasil Barbeito de Paula	EFFECT OF TRANSCRANIAL DIRECT-CURRENT STIMULATION IN ORTHOSTATIC HYPOTENSION AND BALANCE IN ELDERLY
R010	Sarah Pientznauer	*IN SILICO* PROPOSAL TO UNDERSTAND AND TREAT CARDIAC AMYLOIDOSIS BASED ON NETWORK MEDICINE AND DRUG REPOSITIONING
R013	Beatriz Bittencourt Siqueira Farias	USE OF THE CARBOHYDRATE COUNTING METHOD TO CONTROL GLYCATED HEMOGLOBIN A1c IN PATIENTS UNDERGOING CARDIOVASCULAR SURGERY: AN INTEGRATIVE REVIEW
R015	Vanessa Morales Torres	CARDIOMETABOLIC CHANGES PROMOTED BY OVARIECTOMY IN FEMALE C57Bl/6 MICE
R020	Gustavo Rodolfo Moreira	SERUM UREA TO CREATININE RATIO PROGNOSTICS HOSPITALIZATIONS AND DEATH IN PATIENTS WITH CHRONIC HEART FAILURE WITH LOW LEVELS OF NT-PROBNP DESPITE RENAL FUNCTION
R021	Ana Flávia Malheiros	CARDIOGENETIC CENTER OF HOSPITAL UNIVERSITÁRIO ANTONIO PEDRO AND RESULTS OF THE CHARISMA RERGISTRY
R027	Gabriella Vidal Gonçalves	RELATIONSHIP BETWEEN ANEMIA, IRON DEFICIENCY AND HANDGRIP STRENGTH IN PATIENTS HOSPITALIZED WITH HEART FAILURE

✓ **19:00 às 20:00 – Sessão de Pôsteres - Lote 2 (Corredor 2º andar)**

Identificação do trabalho	Relator	Título do trabalho
R008	Maria Emanuelle Argentino da Cunha Neves	ENDOTHELIAL AND OXIDATIVE RESPONSES TO MAXIMUM EXERCISE IN INDIVIDUALS WITH PREVIOUS COVID-19
R012	Roberto de Souza	CARDIOVASCULAR RESPONSES TO STRESS IN INDIVIDUALS RECOVERED FROM COVID-19
R016	Natália dos Santos Lemos	*IN SILICO* PREDICTION ANALYSIS BASED ON PROTEOMICS APPROACH FOR CANDIDATE BIOMARKERS FOR THE DIAGNOSIS OF CARDIOVASCULAR DISEASES
R017	Anne Tayna Stein	CILOSTAZOL MODULATES NF-KB AND ENOS PATHWAYS AND EXERTS VASCULAR PROTECTIVE EFFECTS IN EARLY STAGES OF ATHEROSCLEROSIS DEVELOPMENT
R018	Marcela Rebello Nunes	PROFILE OF THE PREVALENCE OF RESPIRATORY MUSCLE STRENGTH IN PATIENTS IN DIFFERENT STAGES OF HEART FAILURE TREATED IN PRIMARY CARE
R019	Camila dos Santos	PREMATURE MORTALITY DUE TO CARDIOVASCULAR DISEASES IN TWO CITIES OF THE RIO DE JANEIRO STATE: A STUDY CONSIDERING SEX, RACE AND THE MUNICIPAL HUMAN DEVELOPMENT INDEX
R022	Aurea Lucia Alves Azevedo da Cunha Neves	MIOCARDITES E PERICARDITES NA COVID19 E SÍNDROME INFLAMATÓRIA MULTISSISTÊMICA: UM RECORTE DO REGISTRO CHARISMA
R023	Ivis Levy Fernandes	*IN SILICO* DRUG REPURPOSING TO TREAT CARDIAC, RENAL, AND RESPIRATORY COMPLICATIONS OF MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN WITH COVID-19
R024	Diana da Silva	IMPACT OF SUBCHRONIC ADMINISTRATION OF ENDOCRINE DISRUPTOR, TRIBUTYLTIN CHLORIDE, IN THE CARDIOVASCULAR SYSTEM OF WISTAR RATS

R026	Débora Leite Ferreira	RELATIONSHIP BETWEEN VITAMIN D AND DEPRESSIVE SYMPTOMS IN PATIENTS WITH HEART FAILURE
R029	Jose Gregorio Valero Rodriguez	MYOCARDITIS IN CHILDHOOD: A CASE REPORT
R031	Angelo Micheli Di Candia	GROWTH DIFFERENTIATION FACTOR-15 IS ASSOCIATED WITH SEVERITY PARAMETERS IN PATIENTS ADMITTED TO THE HOSPITAL WITH ATRIAL FIBRILLATION

RESUMOS

DOS

TRABALHOS

CIENTÍFICOS

R001

ECHOCARDIOGRAPHIC MARKERS OF CLINICAL EVOLUTION IN CHRONIC CHAGAS CARDIOMYOPATHY

CUNHA, D.M; CUNHA, A.B*; ROBERTO M. SARAIVA**

***FLUMINENSE FEDERAL UNIVERSITY**

****EVANDRO CHAGAS NATIONAL INSTITUTE OF INFECTIOUS DISEASES**

INTRODUCTION: Chagas disease is highly prevalent in Brazil and and throughout Latin America. It is estimated that about seven million individuals are infected by the disease, according to the World Health Organization[1]. It is a parasitic disease resulting from infection by the hemoflagellate protozoan *Trypanosoma cruzi,* with the insect Panstrongylos Megistus (kissing bugs) as a vector and its main form of transmission. In the acute phase, the disease has a benign aspect in most cases, with many trypanosomes in the bloodstream, being little symptomatic and with low mortality, around five percent[2]. In the chronic phase, trypanosomes disappear from the circulation and the disease can present in indeterminate or determinate (cardiomyopathy, intestinal form or mixed) forms. Its chronic form can lead to myocardial fibrosis and chronic Chagas cardiomyopathy (CCC)[3]. Echocardiographic parameters have been useful as predictors of progression and mortality in Chagas disease[4]. **OBJECTIVES**: to assess the rate of progression from the early asymptomatic stages of CCC to the advanced stages; to evaluate the echocardiogram as an instrument of prognostic factors for the progression of CCC; to determine the overall and cardiac mortality rate of the early stages of CCC ate thirteen years of follow-up. **METHODS:** longitudinal cohort of one hundred and seventy-seven patients with CCC in the initial stages (A and B) of the classification of Brazilian Society of Tropical Medicine, constituting a database with patients from Evandro Chagas Institute of Infectious Diseases and collecting epidemiological, clinical, electrocardiographic and echocardiographic data. The data were organized in a table on the Excel platform. Inclusion criteria: patients over eighteen years of age with positive serology in at least two diagnostic tests. Exclusion criteria: patients with thyroid diseases, orovalvar diseases, malignant or decompensated hypertension. Statistical analysis: The variables will be tested by regression analysis with multiple predictors for outcomes described. Once the variables that had independent prognostic value have been identified, ROC curves will be constructed to determine their optimal cut-off points for predicting the outcomes studied. Then, cumulative survival curves will be constructed by dividing individuals into groups with a given characteristic above or below the cut-off point. The level of significance adopted will be 0.05. **PRELIMINARY RESULTS:** In thirteen years, the overall mortality rate was 25,56%. The functional progression rate was 23,86%. **DISCUSSION/CONCLUSIONS**: The mortality rate found was similar to that found in the literature in Brazil, where the mortality ranged from 14% a 30%[5].

FINANCIAL SUPORT: Non-existent.

ETHICS COMITTEE APPROVAL: 63495222.1.3001.5243.

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R002

PROFESSOR'S AND STUDENT'S MENTAL HEALTH DURING AND AFTER THE COVID-19 PANDEMIC IN A FEDERAL PUBLIC UNIVERSITY

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INTRODUCTION: The COVID-19 pandemic had profound and enduring impacts on mental health. As people worldwide grappled with the direct and indirect consequences of the virus, including illness, economic strain, social isolation, mental health issues emerged as a significant concern. Health-risk behaviors are the leading causes of morbidity and mortality among teenagers and young undergraduate students, predisposing them to develop organic dysfunctions such as cardiovascular diseases, diabetes, systemic arterial hypertension, atherosclerosis, stroke, and cancer[1]. **OBJECTIVE:** To assess the levels of depression, anxiety, and stress during and after remote teaching among professors and students at Federal Fluminense University. **METHODS:** Participant recruitment was entirely online. Faculty members and undergraduate students were recruited during the latter half of the remote academic semesters in 2020/1 (from 2020-09-14 to 2020-12-15) and 2020/2 (from 2021-02-01 to 2021-05-10). Another recruitment was carried out after the resumption of regular classes between 2022-11-10 and 2023-10-17. Participants provided information regarding their sex and age. The Depression, Anxiety, and Stress Scale (DASS-21) instrument was administered, which comprises 21 questions grouped into three domains, each with 7 items. Respondents assessed each statement based on their experiences over the past week, rating them from 0 (strongly disagree) to 3 (strongly agree), resulting in a total score ranging from 0 to 63 points[2]. **RESULTS:** During the pandemic, 130 participants were enrolled, comprising 61 (47%) professors and 69 (53%) students. Among professors, 24 (39%) were male and 37 (61%) were female. Among students, 19 (28%) were male, 49 (71%) were female, and one (1%) did not disclose their gender. The mean DASS-21 score for professors was 13.5±11.2, while for students, it was 31.8±16.3. After the pandemic, 28 participants were enrolled, including 6 (21.5%) professors and 22 (78.5%) students. The mean score increased for professors to 20.2±18.6 and decreased for students to 27.2±11.5. Assessing each domain individually during the pandemic, the majority of professors exhibited normal levels of depression (65%), anxiety (70%), and stress (57%). However, severe and extremely severe levels of depression, anxiety, and stress were identified in 4%, 12%, and 12% of teachers, respectively. These levels increased to nearly 34% after the pandemic across all three domains. In contrast, students during the pandemic displayed higher rates of anxiety, depression, and stress compared to professors ($p<0.0001$). For depression, 20% of students were classified as normal, while 46% were categorized as severely or extremely severely depressed. Similarly, anxiety at a normal level was observed in 30% of students, in contrast to 51% classified as experiencing severe or extremely severe anxiety. Lastly, 18% of students were classified as having normal stress levels, with 55% experiencing severe or extremely severe stress. Following the pandemic, all these severe or extremely severe levels decreased to 32% for depression, 37% for anxiety, and 30% for stress. **DISCUSSION/CONCLUSION:** Our data confirm a decrease in the levels of depression, anxiety, and stress, which is a positive development for the mental health of this population. Recent studies have indicated that while the levels of mental symptoms decrease over time, the prevalence of mental health symptoms remains high[3].

FINANCIAL SUPPORT: None.

ETHICS COMMITTEE APPROVAL: CAAE 40140220.5.0000.5626.

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R003

PLASTICITY OF ADIPOSE TISSUE IN OBESE ANIMALS: EFFECTS OF GENETIC DELETION OF THE MrgD RECEPTOR AND ANGIOTENSIN (1-7)

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INTRODUCTION: The renin-angiotensin system (RAS) is an important mechanism of interaction between obesity and cardiometabolic risk factors[1]. Fat accumulation promotes overactivation of the classical RAS axis and can impair adipose tissue morphology and function[2-3]. On the other hand, activation of the RAS counterregulatory axis, both Angiotensin (Ang) (1-7)/ MAS receptor and alamandine/ MrgD receptor, can activate thermogenesis and produce anti-obesity effects on the plasticity of white adipose tissue (WAT) and brown (BAT)[4-6]. **OBJECTIVES**: To investigate the contribution of the counter-regulatory axis, via MrgD and Ang (1-7) receptors, in the plasticity of adipose tissue in a diet-induced obesity model. **METHODS**: Male C57BL6 wild-type (WT) and MrgD receptor knockout (MrgD-ko) mice received a control (SC) or high-fat (HF) diet for eight weeks. The animals were randomly divided into 5 experimental groups (n=5/group): SC (WT, SC diet), HF (WT, HF diet), HF+Ang (1-7) (WT, HF + Ang diet (1-7)), MrgD-ko (MrgD knockout, HF diet), MrgD-ko+Ang (1-7) (MrgD knockout, HF diet + Ang (1-7)). Ang (1-7) was administered by gavage, in the last 14 days of the experiment, at a dose of 30 µg/kg/day. Analyzes of food and energy consumption, body mass (BM), adiposity index, oral glucose tolerance test (OGTT), and lipid profile were performed. In WAT and BAT, morphology will be evaluated by optical and electron microscopy, enzymatic activity, RAS components, markers of adipogenesis, thermogenesis, and angiogenesis through immunohistochemistry, Western blot, RT-qPCR, and mass spectrometry. Data will be analyzed by one-way ANOVA and Holm-Sidak post-test. The preliminary results are from a partial sample (N≈5/group), as the second batch is in progress to reach the N proposed by the sample calculation (N=12/group). **PRELIMINARY RESULTS:** Food consumption remained constant without statistical difference between the experimental groups, while energy consumption was higher in the HF, MrgD-ko, and MrgD-ko+Ang groups (1-7). Compared to the SC group, an increase in MC, adiposity index, and subcutaneous WAT mass was observed in animals fed the HF diet. However, treatment with Ang (1-7) reduced the gain in BM and subcutaneous WAT mass only in the HF + Ang (1-7) group. The BAT mass showed no statistical difference between the experimental groups. The HF group showed glucose intolerance when compared to the SC group, however, when compared to the HF group, the MrgD-ko+Ang (1-7) animals showed an improvement in glucose intolerance. Triglyceride levels, relative to SC, increased only in the MrgD-ko groups, while total cholesterol levels increased in all groups fed the HF diet. **PERSPECTIVES/PARTIAL CONCLUSION:** The partial results obtained demonstrate the importance of the MrgD receptor in maintaining metabolic homeostasis. Therefore, deletion of the MrgD receptor is expected to worsen the metabolic dysfunctions of obesity.

KEYWORDS: obesity, renin-angiotensin system, adipose tissue, thermogenesis.

FINANCIAL SUPPORT: FAPERJ and CNPq

ETHICS COMITEE APPROVAL: CEUA/UFMG 1892018.

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R004

IMPACT OF DAY AND NIGHT BED BATH ON GLYCEMIC VARIATION OF CRITICAL CARE PATIENTS WITH SEPSIS

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INTRODUCTION: Sepsis is an important healthcare problem, defined as a life-threatening organ disfunction caused by a deregulated host response to an infection[1]. A common complication during sepsis course is the alteration of glycemic control, and hyperglycemia and increased glycemic variability are associated with increased mortality[2-4]. The outcomes of these patients often depend on critical interventions, and the admission to an Intensive Care Unit is required. Nursing team will be responsible to supply the basic human necessities, including hygiene and bath, and some studies have shown that both traditional bed bath, with water and soap, and bath with washcloths do not imply in hemodynamic instability[5-7]. However, there is a suggestion that bed bath can significantly decrease blood glucose[8]. **OBJECTIVE:** To compare the blood glucose of patients with sepsis in intensive care units before and after day and night bed bath **METHODS:** Preliminary data from a randomized clinical trial performed with 30 critical patients with sepsis consecutively recruited. Blood glucose was obtained by a small sample (0.2 cc) collected of invasive blood pressure catheter, five minutes before and five minutes after bed bath. Comparison of blood glucose variation after day and night bed bath was performed by Mann-Whitney U Test. The significance level (α) was previously fixed at 0.05. **RESULTS:** The sample was composed by 16 women (53.3%). The mean age was 67±14 years, 13 patients (43.3%) presented pulmonary sepsis, and 20 baths were performed in night shift (66.6%). Blood glucose decreased after 26 baths, and there was no case of hypoglycemia. The difference between median glycemia after day bed bath (-17.00±27 mg/dl) and after night bed bath (-27.00±20 mg/dl) was not statistically significant (p = 0.530). **DISCUSSION:** It is remarkable that bed bath can impact on blood glucose, and it could be related to hemodynamic changes, higher glucose consumption caused by improved metabolism or mobilization. However, there was no different impact of day or night bed bath. **CONCLUSION:** In our study, bed bath significantly reduced blood glucose of patients with sepsis. Day and night bed baths have similar impacts on blood glucose variation, without causing any damage to these patients.

FINANTIAL SUPPORT: This study is financed by FOPESQ.

ETHICS COMITEE APPROVAL: 4.418.759.

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R005

WARFARIN PHARMACOVIGILANCE: PROPOSAL OF AN IMPROVED TRIGGER TOOL METHOD

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INTRODUCTION: Adverse Drug Events may cause patient harm, favoring hospitalization and death[1]. Warfarin is linked to severe bleeding, sometimes fatal[2]. Despite the availability of alternatives, it remains widely prescribed, presenting exclusive indications[3]. Among the methods ready to use, the literature highlights the lack of rigorous monitoring strategies to ensure the safety and efficacy of warfarin[4]. The literature presents vitamin K as a useful screening tool to identify coumarin-associated bleeding events[5]. **OBJECTIVES:** This work aimed to compare the positive predictive value of vitamin K as a trigger tool to monitor warfarin-associated bleeding between electronic and traditional manual screening. Additionally, this study postulated that, in a length of stay independent manner, electronic tracking and the time of vitamin K administration along hospitalization might be helpful to differentiate events leading to admission from those occurring in the health unit. **METHODS:** The work embraced three protocols, including hospitalized patients above 18 who utilized vitamin K and warfarin during the period of interest. In case of bleeding, the patients' medical records were consulted to check additional data, including their evolution. The first protocol comprehended a retrospective study adapted from Roque & Melo[6] involving discharged patients between December 1, 2007, and February 28, 2008 (hospitalization length of stay > 48 h). In this protocol, manual tracking of vitamin K within randomly sorted medical records was substituted by electronic tracking within all charts. Protocols 2 and 3 consisted of retrospective and prospective studies, including discharged patients between August 2011 and July 2013 and from July 2017 to June 2018, respectively. These protocols also embraced electronic tracking within all medical records. However, patients were included in a length of stay independent manner. In addition, vitamin K use within the first 48 hours of admission was considered to differentiate if the warfarin adverse event was the cause or a drug-related problem during the hospitalization**. RESULTS:** Electronic tracking of vitamin K for the detection of adverse events associated with warfarin enhanced the performance of the trigger tool (predictive positive value = 25.0%) compared to the original method (predictive positive value = 7.7%). The complementary adjustments applied to the original method indicated whether the bleeding occurred before or after hospitalization. They also allowed the detection of commonly untracked cases. **DISCUSSION/CONCLUSIONS:** These findings highlight the potential contribution of this proposal to pharmacovigilance practice, enabling the improvement of patient care.

FINANCIAL SUPPORT: None.

ETHICS COMITEE APPROVAL: The research received ethical approval from the local Ethics Committee, No. 42697.

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R006

CONSUMPTION OF FOOD RELATED TO CARDIOVASCULAR HEALTH BY OBESE INDIVIDUALS IN THE SOUTHEAST REGION OF BRAZIL DURING THE COVID-19 PANDEMIC.

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INTRODUCTION: Obesity, as well as the consumption of ultra-processed foods, is considered a risk factor for cardiovascular diseases (CVDs).[1–2] In this context, the Coronavirus Disease 2019 (COVID-19) pandemic, causing changes in eating habits, may have enhanced the presence of such factors.[3] **OBJECTIVES:** This study seeks to evaluate the eating behavior of obese people in the southeast region of Brazil during the COVID-19 pandemic. **METHODS**: An online questionnaire was administered to individuals over 18 years of age, of both sexes and from the Southeast region of Brazil to prepare this observational cross-sectional cohort study. The main exclusion criterion was the presence of a BMI (Body Mass Index) equal to or less than 29.9 kg/m². Data are presented in percentage and total number of participants. **RESULTS:** Of the 1010 participants, 15.7% (n=159) were classified as obese based on self-reported weight and height in the questionnaire. Of those obese, 79.9% (n=127) are women and 20.1% (n=32) are men. 30.8% (n=49) of the participants declared themselves black (black or mixed race), white 66.7% (n=106) and yellow 0.6% (n=1). The average age observed was 34 years old (SD = 14.02) and the majority, 49.1% (n=78), are postgraduates. Monthly income is distributed in 13.8% (n=22) receiving up to R$1254, 52.8% (n=84) receiving between R$1255 and R$8640, and 33.3% (n=53) receiving above R$8640. When evaluating food consumption, the following results were obtained, considering “I” for the perception of increased consumption, “D” for the perception of decreased consumption, “NA” for no perception of alteration in consumption and “NC” for non-consumption: regarding fruit consumption, there was a prevalence of “I” with 36.5% (n=58) and “NA” with 35.8% (n=57); regarding the consumption of vegetables, the prevalence of “A” was noted with 40.2% (n=64) and “NA” with 39.6% (n=63); in relation to the consumption of sweets, the prevalence was more evident in “I” with 49.7% (n=79); in the consumption of soft drinks, the prevalence was in “I” with 26.4% (n=42) and in “NA” with 30.8% (n=49); on the consumption of processed foods (snacks, stuffed biscuits, chocolate milk, juice boxes or powder, etc.) the prevalence was shown in “I” with 30.2% (n= 48) and in “NA” with 36.5 (n=58); the consumption of sausages (ham, salami, mortadella, sausage, turkey breast, sausage) had a prevalence in “I” with 35.2 (n=56) and in “NA” with 37.1 (n= 59). **DISCUSSION/CONCLUSIONS**: The data presented demonstrate that there were changes in food consumption, with a greater prevalence in the perception of an increase and no alteration in the consumption of all food groups evaluated. The report of perception in the increased consumption of ultra-processed foods demonstrates the presence of risk factors for CVD.[2] The perception in the consumption of sweets is shown to be more expressive than in other food groups and may cause a worsening of obesity .[4–5] However, increasing the consumption of fruits and vegetables can be an ally in the prevention and control of cardiovascular diseases.[6]

FINANCIAL SUPPORT: CAPES; FAPERJ.

ETHICS COMITEE APPROVAL: Approved by the CEP of the Faculdade de Medicina da Universidade Federal Fluminense under number 47412721.6.0000.5243.

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R007

IN SILICO DRUG REPURPOSING STUDY TO MITIGATE CARDIAC, RESPIRATORY, AND RENAL COMPLICATIONS OF COVID-19 CONSIDERING GENDER DIFFERENCES

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INTRODUCTION: In addition to pulmonary dysfunction, cardiorenal syndrome plays a relevant role in severe COVID-19.[1,2] As a specific treatment for this disease complication is absent, drug repositioning constitutes a noteworthy strategy to attain therapeutic options with less investment of time and resources. It focuses on the molecules or the diseases, and the informatic's tools improve the process. Drug repurposing based on omics science, mixing systems biology concepts and network theory tools, can elucidate the relationships within the human interactome, its functional organization, and the consequences of disturbances, such as drugs and diseases, in its arrangement.[3,4] But the literature also discusses differences between genders regarding biological and cultural issues.[5-7] **OBJECTIVES:** This work aims to identify repositionable drugs to treat cardiac, respiratory, and renal complications of COVID-19 from the perspective of both gender and network medicine. **METHODS:** The present in silico study comprehends 3 phases: Phase I - Literature mining for omics data collection about the complications of interest in men and women above the age of 19; Phase II - Recognition of relevant and common genes/proteins related to these complications, biological networks building and target mapping; Phase III - Identification of drugs capable of modulating the mapped drugable targets. **RESULTS:** The study is now in phase I. After eliminating replicated documents, 6,858 articles of interest published from December 2019 to March 2022 were identified. After sampling by a simple random method, 10% of the papers followed further analysis (686 papers). The OnTheFly2.0 text mining tool[8] provided 94 lists with several biological entities retrieved from the papers that had their unique ensemble identification checked. Till now, about one-third of 22 thousand biological entities were ranked according to their citation score among the documents [(0.7 x average position within the lists) + (0.3 x number of lists presenting the biological entity)]. **DISCUSSION/CONCLUSIONS:** Finishing phase I, the protein-protein network will be constructed with the most promising entities aiming to model biological mechanisms underlying the complications of interest. This analysis embraces a mandatory step *in sílico* drug repositioning studies.

FINANCIAL SUPPORT: CAPES; CNPq; FAPERJ.

ETHICS COMITEE APPROVAL: As an *in sílico* study, this approval is not necessary.

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R008

ENDOTHELIAL AND OXIDATIVE RESPONSES TO MAXIMUM EXERCISE IN INDIVIDUALS WITH PREVIOUS COVID-19

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INTRODUCTION: The COVID-19 pandemic has impacted humanity in multiple ways through a respiratory contamination infection causing millions of deaths worldwide, mainly in the elderly and people at cardiometabolic risk[1]. Previous studies suggest that patients recovered from COVID-19 may present endothelial dysfunction[2], which can be disclosed after intense physiological stress, such as maximal exercise. **OBJECTIVES**: The study aimed to understand the endothelial mechanisms involved in the response to maximal exercise in individuals with previous infection by SARS-CoV-2. **METHODS:** Men and women with previous COVID-19 (mild-moderate symptoms, 3-18 months, confirmed for RT-PCR or serological test) without a history of chronic diseases or use of continuous medication (n=12, 26±5years, BMI=24.4±2.2kg/m^2) have been recruited. Glycemic and lipid parameters were measured in order to characterize the participants. Subjects underwent a cardiopulmonary exercise test (CET) in a leg cycle ergometer with measurements of heart rate (HR, ECG monitor) and blood pressure (BP, Tango M2, SunTech). O2 uptake (VO2), and CO2 output (VCO2) were measured breath by breath, through a metabolic analyzer (Ultima, MedGraphs). Maximum voluntary fatigue was considered when at least 2 of the 3 criteria were met (RR>1.1; score 10 on the Borg scale[3] and/or HR >90% estimated for age). Endothelial function on the brachial artery [flow-mediated dilation (FMD), by doppler ultrasound (Logiq P5, GE)][4,5] and blood sampling were assessed at baseline, 30, 90, and 120 minutes after CET (baseline, 30CET, 90CET, and 120CET). Oxidative markers [thiobarbituric acid reactive substances (TBARS) and carbonyl proteins] were measured by colorimetric assays. One way ANOVA followed by Fisher's post hoc when appropriate, or t tests to pairwise comparisons were used as statistical analyses. **RESULTS:** Participants were characterized regarding blood glucose (84.9±9.4 mg/dL), HOMA-IR (1.9±0.7), triglycerides (81±22mg/dL), total cholesterol (168±27 mg/dL), LDL-c (94±20 mg/dL), HDL-c (58±13 mg/dL and Castelli index (2.9±0.5). CET increased HR (baseline 81±17 vs. CET 167±19 bpm, $p<0.05$), BP (baseline 84±10 vs. CET 106±19 mmHg, $p<0.05$) and oxygen consumption (baseline 3.6±0.6 vs. CET 26.7±6,9 vs recovery 4.7±0,9 mL/kg/min, $p<0.05$), without returning to baseline levels after exercise. CET increased FMD only at 120CET when compared to 90CET (90CET 8.1±2.0% vs. 120CET 12.3±4.5%, $p<0.01$). CET was unable to alter TBARS levels (baseline 4.3±0.9 vs 30CET 3.9±1.1mg/L, $p>0.05$, n=10) and carbonyl proteins (baseline 6.1±0.4 vs. 30CET 4.3±2.3 nmol/mg, $p>0.05$, n=10). **DISCUSSION/CONCLUSIONS:** Preliminary data suggest that changes in endothelial function seem to be closely related to the capacity to perform maximum exercise in young post-COVID-19 individuals.

FINANCIAL SUPPORT: FAPERJ e CAPES

ETHICS COMITEE APPROVAL: CAAE: 50132121.3.0000.5243

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R009

EFFECT OF TRANSCRANIAL DIRECT-CURRENT STIMULATION IN ORTHOSTATIC HYPOTENSION AND BALANCE IN ELDERLY

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INTRODUCTION: The aging population grows with a high incidence of falls with severe outcomes, which are a public health problem[1]. Among the causes are orthostatic hypotension[2] and decreased postural control, related to the motor cortex, bulb and cerebellum[3]. Transcranial Direct Current Stimulation (tDCS) is a neuromodulatory technique that increases cortical excitability[4] and may modify postural control[5,6,7,8]. Although tDCS is widely studied in the treatment of neuropsychological disorders, studies on orthostatic hypotension and balance still scarce. **OBJECTIVES:** To verify the acute effect of tDCS in orthostatic hypotension and balance in healthy elderly. **METHODS:** The sample will be composed of elderly. The n sample will be calculated to obtain statistical power of at least 0.8 and level of significance of 0.05. Three randomized, double-blind, placebo-controlled clinical trials will be conducted. Inclusion criteria adopted: age over 60yrs and will be enrolled in the Federal Fluminense University fall prevention project. The exclusion criteria adopted: regular use of medications that may influence the variables of balance or inhibit the effects of tDCS; have metallic implants close to the placement of the tDCS electrodes and/or cardiac pacemaker; neuropsychological diseases, osteomyelitis and/or labyrinth disorders. In studies 1, 2 and 3, the acute effect of a single session of tDCS on the hemodynamic and equilibrium variables will be tested, changing only the stimulated region. In the first study, the primary motor cortex was stimulated; in second study, the cerebellar cortex and in study 3, the combination of stimulation in both regions. Each study will be performed in 2 visits (interval of 2 to 7 days), differentiated by the condition of the tDCS (anodic or placebo, random orders). The experimental design will be composed of: Rest 1 (5 min), Quasi-static Balance Test 1 (QBT - including orthostatism), tDCS (2 mA for 20 min), Rest 2 (5 min), QBT 2 (15 min). The cardiovascular and hemodynamic variables will be monitored throughout all the tests. Statistical analysis (SPSS software v.20.0) includes Shapiro-Wilk normality tests, homogeneity of variance, sphericity, ANOVA two-way repeated measures, Bonferroni post hoc (when necessary). If the data present a non-parametric distribution, the logarithm neperian will be applied. Results will be presented as mean and standard deviation (if parametric) or median and interquartile deviation (if non-parametric). For all tests, $p \leq 0.05$ will be adopted. **RESULTS**: The project is in phase of the recruitment of volunteers. The tDCS performed on the primary motor cortex and cerebellar cortex in the same session is expected to chronically potentiate the benefits of balance training and reduce the orthostatic hypotensive effect. **DISCUSSION AND CONCLUSIONS**: This study does not present data collected yet.

FINANCIAL SUPPORT: CAPES.

Ethics' Committee Approval: (532.743/2014).

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R010

IN SILICO PROPOSAL TO UNDERSTAND AND TREAT CARDIAC AMYLOIDOSIS BASED ON NETWORK MEDICINE AND DRUG REPOSITIONING

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INTRODUCTION: Cardiac amyloidosis results in restrictive cardiomyopathy caused by the extracellular deposition of proteins in the myocardium. The elucidation of the biological mechanisms underlying its pathogenesis allows the screening several effective therapies involving differing mechanisms of action.[1,2] Network medicine integrates system biology and graph theory to study disease traits in the interactome and their possible treatment.[3] This approach is increasing in drug repositioning research.[4,5] **OBJECTIVES:** This work aims to investigate the pathophysiology of cardiac amyloidosis through a network medicine perspective, unveiling potential targets for drug repositioning. **METHODS:** The *in silico* study comprehends 3 phases. Phase I embraces omics data collection about mechanisms related to cardiac amyloidosis. Gene Expression Omnibus (GEO) will be consulted to identify Differentially Expressed Genes (DEGs) with a fold change (FC) >1.2 (significance accepted if $p < 0.05$ by GEO2R). Phase II encompasses constructing the biological network and target mapping using Cytoscape and Webgestalt. The identification of molecules capable of modulating the drugable targets identified will be performed in phase III using that the Drugbank database. **RESULTS:** This project is not under development yet. Thus, regarding the network medicine contributes to a holistic point of view on disease signatures. It can address relevant targets in the protein-protein network for pharmacological modulation. **DISCUSSION/CONCLUSIONS:** Network medicine applied to drug repositioning is low-cost and a promising strategy for identifying potential drugs for the treatment of cardiac amyloidosis in the short term.

FINANCIAL SUPPORT: FAPERJ.

ETHICS COMITEE APPROVAL: As an *in sílico* study, this approval is not necessary.

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R011

IN SILICO PROPOSAL TO IMPROVE ANTIRETROVIRAL THERAPIES BASED ON NETWORK MEDICINE AND DRUG REPOSITIONING

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INTRODUCTION: Nowadays, acquired human immunodeficiency syndrome (AIDS), caused by the human immunodeficiency virus (HIV), is considered a chronic condition due to augmented life expectancy related to modern Antiretroviral Therapy (ART). The prevalence of cardiovascular diseases (CVD) increases with aging. Thus, it may be a comorbidity in people with HIV. In addition, modern ART is related to cardiovascular events.[1-2-3] Network medicine is a subarea of network analysis integrating system biology and graph theory. It studies disease traits in the interactome and their possible treatment.[4] This approach is also interesting for drug repositioning.[5] **OBJECTIVES**: This study aims to investigate mechanisms underlying cardiovascular outcomes related to ART, proposing an improvement of pharmacotherapy based on drug repositioning. **METHODS**: The proposal is divided into 3 phases: Phase I - Literature mining for omics data collection about mechanisms related to ART therapeutic action and their cardiovascular events; Phase II - Recognition of relevant genes/proteins related to these outcomes, biological networks building, and target mapping; Phase III - Identification of drugs capable of modulating the mapped druggable targets dissociated from cardiovascular events. Bioinformatic tools such as OnTheFly2.0, Uniprot, Cytoscape, and Webgestalt will be used in the study. **RESULTS:** Network medicine imprints a holistic point of view about the health-disease-treatment process. Potential disease drivers and uncomprehended drug effects can be unveiled. **DISCUSSION/CONCLUSIONS:** Therapeutic and collateral effects of drugs may be studied through network medicine, allowing advances in pharmacological approach.

FINANCIAL SUPPORT: FAPERJ.

ETHICS COMMITTEE APPROVAL: As an *in sílico* study, this approval is not necessary.

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R012

CARDIOVASCULAR RESPONSES TO STRESS IN INDIVIDUALS RECOVERED FROM COVID-19

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INTRODUCTION: The pandemic of the new coronavirus, SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) and COVID-19 (coronavirus disease 19) impacted humanity in multiple ways, when a respiratory infection led to millions of deaths across the world[1]. The COVID-19 pandemic is the biggest public health crisis of the 21st century and never have so many experts from different areas of knowledge come together to investigate and seek treatment for this disease[2].The SARS-CoV-2 infection-induced stress can cause changes in blood pressure autonomic control[3].Therefore, a better understanding of the pathophysiological mechanisms of COVID-19 and possible subclinical changes in asymptomatic individuals recovered from the disease are essential to design and implement measures to mitigate related morbidity and mortality. **OBJECTIVE:** To investigate the stress response of the cardiovascular system in participants 3 months after recovery from COVID-19.METHOD: Heart rate (HR), blood pressure (BP) and cardiac output (CO) were measured at rest, during a cold pressor test (CPT) and dynamic handgrip exercise in a non-COVID group (not exposed to infection by SARS-Cov2) and a group recovered from COVID-19 (3 months after SARS-Cov2 infection) The results are reported as means ± standard error. The data distribution was tested by the Shapiro-Wilk test, and all variables were normally distributed. Student's t-tests were applied to test possible differences between participants' characteristics. The main effects of time, group (Healthy Controls vs. post-COVID) and their interactions were tested by applying a two-way ANOVA. When significance was found for the interaction, the Bonferroni *post hoc* adjustment was used for multiple comparisons. Statistical significance was set at $p \leq 0.05$, while an α-value of 0.05 is assumed**. RESULTS**: Twenty-seven participants underwent the experimental protocol (CAAE:50132121.3.0000.5243) between June and December 2022. The non-COVID group (GNC) had six men (age 30±9 years, weight 84±18 kg and height 177±7 cm) and five women (age 25 ± 3 years ; weight 65 ± 6 kg and height 164 ± 9 cm) and the COVID recovered group (GRC) had six men (age 30 ± 7 years; weight 74 ± 6 kg and height 173 ± 7 cm) and ten women (age 25 ± 9 years old, weight 58 ± 6 kg and height 162 ± 7 cm). There was no difference between the groups in relation to anthropometric data. All participants were healthy and did not use medication. Resting HR was similar between groups (GNC:67±10 bpm; GRC:69±10bpm; p=0.29) and increased similarly during CPT and handgrip exercise. Systolic BP in the COVID-recovered group was higher at rest (GNC:122±12 mmHg; GRC:135±10 mmHg; p=0.04), but the increase during CPT and handgrip was similar. The CO during the control moment was similar between the groups, however, during the hand grip exercise, it increased more in the group recovered from COVID (GNC: 6.2±1.0 l/min; GRC: 7.0± 1.0 l/m; p=0.05). Although it increased during the cold pressor test, this increase was similar between groups. DISCUSSION: The main findings of this present study are: 1) The resting systolic blood pressure of the recovered COVID group is higher than that of the non-COVID group; 2) Cardiac output during handgrip exercise, in individuals three months after recovery from COVID-19, is increased when compared to the non-COVID group; 3) Cardiac baroreflex sensitivity is similar between the groups, both at rest and during the cold pressor test and hand grip exercise. **CONCLUSION:** Better recognition of the presence of dysautonomia in individuals recovered from COVID-19 can provide information for the possible diagnosis and treatment of this serious complication.

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R013

USE OF THE CARBOHYDRATE COUNTING METHOD TO CONTROL GLYCATED HEMOGLOBIN A1c IN PATIENTS UNDERGOING CARDIOVASCULAR SURGERY: AN INTEGRATIVE REVIEW

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INTRODUCTION: Diabetes Mellitus (DM) is a group of metabolic disorders characterized by the occurrence of hyperglycemia resulting from a defect or insufficiency in the action and release of insulin. The American Diabetes Association (ADA) determines the existence of criteria for diagnosing DM, including a glycated hemoglobin A1c (HbA1c) concentration ≥ 6.5%1. Hyperglycemia has a direct impact on short- and long-term mortality after acute myocardial infarction following coronary intervention2. Thus, there is a positive prognostic relationship between complications in patients with AMI treated invasively and detected glycemic changes3. The carbohydrate counting (CC) technique is a nutritional control approach applied to patients with DM, mainly type 1 and has been identified as an important therapeutic tool to reduce HbA1c4. We postulate that it can be used in the context (HbA1c control/cardiovascular surgeries) in order to improve patients' quality of life and survival. Therefore, information about the use and impact of this approach in this context require further investigation. **OBJECTIVES:** This work describes an integrative review to evaluate the use of the of carbohydrate counting, its impact on glycemic control to reduce the HbA1c rate and its action as a possible preventive measure to improve recovery and/or survival of individuals undergoing cardiovascular surgery. **METHODS**: Studies published between 2013 and 2023 in the PUBMED and SCIELO databases were selected, with descriptor terms available in the DECS/MeSH database, which addressed the use of the therapeutic approach of the carbohydrate concentration technique on the impact of HbA1c and its effect on patients diabetics undergoing cardiovascular surgery. Furthermore, during the study selection and inclusion process, no distinction was made between individuals regarding sex, age, education and sociodemographic. The following publications were considered: controlled, cross-sectional studies, with quantitative and longitudinal approaches, systematic reviews and meta-analyses. **RESULTS/DISCUSSION:** Using inclusion and exclusion criteria, twenty-six articles were selected, all selected from the PUBMED database. Fifteen articles found correlated only the glycated hemoglobin rate with the risk of postoperative cardiovascular complications. Eleven articles correlated only HbA1c and WC rates. No articles were found that addressed the 3 themes together. Some studies demonstrate that diet therapy can impact glycemic control and also the biochemical marker of HbA1c, with important factors being knowledge of carbohydrate concentration methods, the correct ways of using insulin, discipline and responsibility for adherence, in addition to individuality in treatment. Other studies indicated a positive correlation between HbA1c control and clinical results among patients with DM after cardiovascular surgery.. **CONCLUSIONS:** Although no work has jointly addressed CC, HbA1c control and recovery and/or survival gains in patients undergoing cardiovascular surgery, this study demonstrated that this approach can be an important alternative strategy in patients with DM from the establishment of careful critheria. Currently, a clinical study is being designed to evaluate the evolution of DM1 patients undergoing cardiovascular surgical procedures and control of HbA1c through the carbohydrate counting technique.

FINANCIAL SUPPORT: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ETHICS COMITEE APPROVAL: Not applicable.

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R014

VASCULAR RESPONSE ON OFFSPRING OF *WISTAR* RATS SUBMITTED TO PRENATAL STRESS AND AEROBIC TRAINING.

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INTRODUCTION: Exposure to a stressful environment during pregnancy has a negative impact on fetal development, and may trigger deleterious effects in vascular function of adult offspring[1]. It is expected that aerobic training minimizes the damage caused by stress, but it is unknown whether there is sexual dimorphism[2]. **OBJECTIVES:** To evaluate the effects of aerobic training on biochemical parameters and vascular function in male and female offspring of *Wistar* rats submitted to prenatal stress. **METHODOLOGY:** Offspring was divided into 4 groups(n=8/sex): a)Control(C), offspring of mothers that were not submitted to stress; b)Control Training(C+T), offspring of mothers that were not submitted to stress and underwent aerobic training; c)Stress(S), offspring of mothers who were submitted to a variable stress protocol; d)Stress Training(S+T), offspring of mothers who were submitted to a variable stress protocol and perform aerobic training. Treadmill started at 60 days old, 2 months, 5 times/week, moderate intensity, 30 minutes/day. Maximal exercise test (MET) was performed before/after the protocol. At 120 days old animals were anesthetized and euthanized. Blood was collected by cardiac puncture for activity of superoxide dismutase enzyme (SOD) analyses. Thoracic aorta was collected for vascular reactivity. Results were expressed as mean±standard error of mean. One/two-way ANOVA with Bonferroni/Tukey's post-test were used. Differences were considered significant when $p \leq 0.05$. **RESULTS:** Final MET was higher in trained groups compared to their respective controls, without significant difference between initial and final MET in untrained groups (Male C:21.69±0.69; S:18.01±0.39; C+T:25.43±3.43; S+T:25.13±4.37m/min;p=0.003; Female C:24.89±1.39; S:21.53±0.90; C+T:28.31±7.06; S+T:27.00±7.75m/min; p<0.0001). Regarding biochemical analyses, SOD activity(C:7.59±0.24; S:8.57±0.10; C+T:7.33±0.20; S+T:8.72±0.09 U/mL;p<0.0001) increased in females of S and S+T vs. their respective controls. There was no difference in males in those parameters (SOD=C:7.81±0.09; S:7.75±0.26; C+T:7.36±0.22; S+T:7.44±0.40U/mL;p=0.60). There were no differences (p>0.05) in phenylephrine-induced contractile response(pCE_{50}: Male C:6.65±0.30; S:7.31±0.30; C+T:7.36±0.20; S+T:6.96±0.24; Female C:6.65±0.30; S:7.31±0.30; C+T:7.36±0.20; S+T:6.95±0.24). In males, S presented impaired the maximum relaxation induced by acetylcholine when compared to C, while S+T presented an improvement in vasodilation, with values similar to C (C:99.90±2.08; S:86.36±2.88; C+T:103.00±2.13; S+T:99.88±2.67%; p<0.0001) and female (C:106.40±3.59; S:78.50±7.43; C+T:99.26±0.74; S+T:104.70±2.54%; p<0.0001). **DISCUSSION/CONCLUSION:** It is suggested that prenatal stress induces cardiometabolic programming in offspring, through alterations in female biochemical parameters. Also, aerobic training prevented the impairments in vascular reactivity to prenatal stress similarly in male and female offspring. Possibly, these changes may be related to oxidative stress and nitric oxide pathway.

FINANCIAL SUPPORT: CAPES, FAPERJ, CNPq.

ETHICS COMITEE APPROVAL: CEUA/UFF (nº5868211118).

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R015

CARDIOMETABOLIC CHANGES PROMOTED BY OVARIECTOMY IN FEMALE C57Bl/6 MICE

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INTRODUCTION: After 12 months of amenorrhea, women aged 40-45 naturally enter menopause[1]. This transition is marked by a sharp decline in estradiol synthesis, a hormone with sexual and cardioprotective properties[2]. Consequently, women are at a higher risk of developing abdominal obesity, increased visceral fat deposition, elevated blood pressure, and type 2 diabetes[3-6]. **OBJECTIVE:** Our goal was to investigate the cardiometabolic changes resulting from surgical menopause in female C57Bl/6 mice. **METHODOLOGY:** At four months of age, the animals were divided into two groups: Control (SHAM, N=7) and Menopause (OVX, N=18). Menopause was induced through bilateral ovariectomy. We monitored weekly changes in body mass (BM), blood pressure (BP), and food consumption. Thermographic images were captured one day before surgery and two months afterward to track the temperature of specific regions, including inguinal subcutaneous white adipose tissue (WAT), interscapular brown adipose tissue (BAT), liver and eyes. The data was analyzed using a T-Test in GraphPad Prism 8.0 software. **PRELIMINARY RESULTS**: We observed a significant increase in BM in the OVX group compared to the SHAM group (+10.7%, p=0.0001). However, no differences were noted in blood pressure, daily food consumption, or the temperature of inguinal subcutaneous WAT, BAT, liver, and eyes. **PERSPECTIVE/PARTIAL CONCLUSION:** The ovariectomy clearly influences body mass. Nevertheless, our experimental design is ongoing, including further subdivision of the OVX group for fish oil supplementation and/or hormone replacement therapy with estradiol. Euthanasia will follow, and subsequent biochemical, morphological, and molecular biology analyses will be conducted to validate and deepen our results. We anticipate that, as we continue the project, cardiometabolic changes will become more apparent as we analyze all animals within their respective groups. We hope that treatments may be developed to address or mitigate these changes.

FINANCIAL SUPPORT: Faperj and UFF.

ETHICS COMITEE APPROVAL: CEUA no 8714100123.

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R016

IN SILICO PREDICTION ANALYSIS BASED ON PROTEOMICS APPROACH FOR CANDIDATE BIOMARKERS FOR THE DIAGNOSIS OF CARDIOVASCULAR DISEASES

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INTRODUCTION: Cardiovascular diseases are the biggest cause of morbidity and mortality in Brazil and around the world and the clinical laboratory is an important factor to establish the prognosis, identifying, extracting risk, monitoring and cure of this particular group[1]. For these purposes, it is mandatory to identify and quantify different biomarkers that characterize processes of loss of function and/or cardiovascular injury, which in turn are commonly detected and quantified using unit tests based on immunoassay platforms[2]. The modern diagnostic medicine evolves the concept of using multi-analytical methodologies and for this reason, mass spectrometry techniques became important diagnostic tools. Additionally, *in silico* proteomics approaches are important tools for the acquisition of predicted spectra of specific masses of target molecules, serving as preliminary study tools for the establishment of future experimental protocols and in vitro studies and laboratory routine applications[4]. **OBJECTIVES:** To carry out specific proteolytic digestion prediction tools to obtain *in silico* mass spectra for biomarkers of injury and cardiovascular function using computational programs. **METHODS:** Troponin I, Myoglobin, BNP (134aa), NT-proBNP, BNP (32aa), ANP (151aa), NT-proANP and ANP (27aa) were used as target markers and Lys-C as a proteolytic enzyme. Next, some software was used to obtain and process information, being applied in the following order of use: Step 1. UniProt protein sequence search, obtaining intact protein sequences; Step 2. mMass digestion prediction with insertion of the intact protein sequence and selection of the desired enzyme, with individual analysis. Each protein has been proven individually. After insertion of the sequence, it was cleaved, and several proteolytic peptide predicted sequences were generated. Step 3. Mmass ion precursor prediction where the software was used again to evaluate the mass and charge of each cleavage, selecting Miscl=1 and “max charge”=7 (charge greater than or equal to 2 and less than or equal to 7). Step 4. UniprotBlast comparison of the sequences cleaved by Lys-C were compared individually with the UNIPROT-SWISSPROT database through blast, following the “selected taxonomy: Homo sapiens [9606]” criteria, identifying them as unique peptide sequences. Only peptide cleavages with a number greater than 10 amino acid residues were used in the search. **RESULTS/DISCUSSION:** To date, all CVD biomarker analyzed generated unique ion precursor predicted sequences with different charge states (+2 to +7). Troponin I (70 total precursor ions and 57 unique peptides), Myoglobin (41 total precursor ions and 31 unique peptides), BNP (38 total precursor ions and 38 unique peptides), NT-proBNP (25 total precursor ions and 25 unique peptides), BNP (32 aa) (9 total precursor ions and 8 unique peptides), ANP (34 total precursor ions and 34 unique peptides), NT-proANP (20 total precursor ions and 20 unique peptides) and ANP (27aa) (4 total precursor ions and 4 unique peptides). **CONCLUSIONS:** The findings demonstrated that *in silico* analysis made it possible to predict possible specific targets used in mass spectrometry analysis for biomarkers of cardiovascular function and injury. New analyzes using different proteolytic enzymes and also new CVD target proteins will be carried out to expand experimental studies.

KEYWORDS: Proteomics approach, in sílico digestion, in sílico mass spectrometry, biomarker, cardiovascular diseases.

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ETHICS COMITEE APPROVAL: Not applicable.

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R017

CILOSTAZOL MODULATES NF-KB AND ENOS PATHWAYS AND EXERTS VASCULAR PROTECTIVE EFFECTS IN EARLY STAGES OF ATHEROSCLEROSIS DEVELOPMENT

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INTRODUCTION: Atherosclerosis is a progressive inflammatory disease of the wall of large and medium sized arteries associated to endothelial dysfunction[1], increased oxidative stress and vascular inflammation[2]. Cilostazol (CIL), a selective phosphodiesterase 3 inhibitor, has been used for intermittent claudication treatment. The molecular mechanism involved in vascular effects of CIL has not yet been fully established. **OBJECTIVE:** The aim of this study was to investigate the effects of CIL at the molecular mechanisms involved in vasodilator and anti-inflammatory properties of cilostazol in aortas of hypercholesterolemic rats. **METHODS:** The animal protocols were approved by the Ethics Committee for Animal Use (CEUA/UFF-14791402219). Adult male wistar rats were divided into three groups: control (C), hypercholesterolemic diet (HC) and HC treated with CIL (HC+CIL). Experimental protocol lasted 45 days and CIL (30 mg/kg) or vehicle (tween: ethanol/water, 10µl/10kg) were administered daily in the last two weeks. All animals were euthanized by exsanguination through cardiac puncture under anesthesia (ketamine and xylazine), blood samples were collected to biochemical assays, and thoracic aortas were excised for vascular reactivity and western blot assays. Statistical analysis was performed using GraphPad Prism 5.0 (San Diego, CA). Data were analyzed using One Way (ANOVA) and Bonferroni post-test ($p<0.05$). **RESULTS:** HC group presented a decrease in maximum relaxation acetylcholine induced (C: 91.57 ± 1.12% x HC: 76.52 ± 1.62%) and an increase in contractile response phenylephrine induced when compared to the control group (C: -$LogCE_{50}$: -6.78 ± 0.02 x HC: -$LogCE_{50}$ -7.27 ± 0.06). On the other hand, CIL treatment promoted a decrease in contractile response to phenylephrine (HC+CIL: -$LogCE_{50}$ 6.41 ± 0.06) and evoked an improvement in endothelium-dependent vasorelaxant response (HC+CIL: 106.50 ± 4.04%). HC group promoted a significantly increase of Malondialdehyde (MDA) levels in aorta (HC: 63.38 ± 7.70 x C: 33.21± 0.53 nmol / mg $protein^{-1}$) when compared to the C group. CIL treatment notably decreased the MDA concentration when compared with HC group (HC+CIL 20.64 ± 0.72 nmol/ mg $protein^{-1}$). HC group changes the aorta levels of Tumour Necrosis Factor alpha (TNF-α) (C: 62.60 ± 0.65 x HC: 74.94 ± 0.48pmol/mg) and Thromboxane B2 (TXB_2) (C: 345.40 ± 4.91 x HC: 408.20 ± 7.53 pmol/mg). The treatment with CIL reversed these effects (TNF-α HC+CIL: 63.35 ± 0.64 pmol/mg and TXB_2 HC+CIL: 253.30 ± 19.00 pmol/mg). HC diet increased the expression and activation of proteins involved in the PLC/PKC-α/p38/IκB-α/NF-κB pathway and reduced the expression of proteins involved in PKA/eNOS/PKG pathway ($p<0.05$). Treatment with CIL was able to reverse all these molecular changes promoted by the diet. **DISCUSSION/CONCLUSION:** The subacute treatment with CIL presented vasodilator and anti-inflammatory actions, suggesting that this drug may be useful in the treatment of atherosclerosis. These actions seem to be related to the modulation of PLC/PKC-α/p38/IκB-α/NF-κB and PKA/eNOS/PKG signaling pathways.

FINANCIAL SUPPORT: CNPq, CAPES, PROPPI-UFF, FAPERJ.

ETHICS COMMITTEE FOR ANIMAL USE: CEUA/UFF-14791402219

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R018

PROFILE OF THE PREVALENCE OF RESPIRATORY MUSCLE STRENGTH IN PATIENTS IN DIFFERENT STAGES OF HEART FAILURE TREATED IN PRIMARY CARE

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INTRODUCTION: Heart failure (HF) is a complex syndrome that is considered a major public health problem. Different subtypes of HF are classically defined based on left ventricular ejection fraction (LVEF). Although it is known that respiratory muscle weakness (RMF) predicts prognosis in HF patients, the prevalence of RMF (Respiratory Muscle Strength) and its prognosis from a stage perspective remain unknown. Strategies for the prevention and non-pharmacological care of HF require epidemiological data to be obtained in primary care. OBJECTIVE: To estimate the prevalence of FMR in the various stages of HF and its correlation with performance in the 2 min step test (TD2M) in primary care. **METHODS:** This is a cross-sectional study that included 173 participants, aged ≥45 years, randomly selected and registered in a primary care program in a medium-sized city in Rio de Janeiro. All participants underwent clinical and functional assessments of FMR and exercise tolerance. *Student's t-test* and *ONE WAY ANOVA* were used to establish the differences between the stages and Pearson's test was used to establish the correlation between the variables. p ≤0.05 was considered significant. RESULTS: Of the 630 volunteers, 173 individuals were included, age 63 ± 8 years, 108 women and a predominance of stage A in both sexes. In all stages of HF, max PI was below the predicted value, but only stages B and C showed inspiratory muscle weakness (max PI < 70% of predicted value), and between stages 0, A, B and C, max PI showed a significant difference (p<0.001) in both men and women. There was a positive correlation between the number of steps climbed in TD2M and PI Max (r=0.40, p<0.05).**DISCUSSION/CONCLUSION:** This study is supposed to be a pioneer in characterizing FMR and exercise tolerance in the different stages of HF in primary care. It is known that respiratory muscle weakness is predictive of morbidity and mortality in this population. This study showed an IMF < 70% of predicted in stage B, which points to the possibility of preventive action before symptoms appear; the significant correlation between IMF and steps climbed indicates that the greater the inspiratory muscle strength, the greater the number of steps climbed. There was a prevalence of RMF in the stages of HF, especially B and C, pointing to preventive action in these patients. TD performance was correlated with FMR, with a positive association between these variables. The sample size could be increased to represent the entire population. This study identified several functional profiles, with the most prevalent being patients in stages A and B of the disease, with patients in profiles C and D appearing, but without statistical significance. Correlations were found between the respiratory muscle strength of these individuals and the step test, which directly influences their performance and functional capacity.

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ETHICS COMMITTEE APPROVAL: Medical Research Ethics Committee of the Faculdade de Medicina/Hospital Universitário Antônio Pedro, under opinion: 1.388.594.

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R019

PREMATURE MORTALITY DUE TO CARDIOVASCULAR DISEASES IN TWO CITIES OF THE RIO DE JANEIRO STATE: A STUDY CONSIDERING SEX, RACE AND THE MUNICIPAL HUMAN DEVELOPMENT INDEX

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INTRODUCTION: Cardiovascular diseases (CVD) are the leading cause of death worldwide, but differences are reported according to sex and race[1-8]. There is also a discussion about socioeconomic status and CVD vulnerability, including mortality between 30 and 69 years of age, known as premature mortality[1,2,4-9]. **OBJECTIVES**: This work investigates premature mortality due to CVD, ischemic heart disease (IHD) and cerebrovascular disease (CBVD) in a brazilian context, comparing two Rio de Janeiro State cities. Niterói and Belford Roxo present different municipal human development indexes (HDIm), but similar populations. In addition, the study aims to characterize premature mortality according to sex and race in these cities. **METHODS:** This work encompasses an ecological observational study. Data were extracted from Mortality Information System, managed by the Ministry of Health. The period of interest was from 2010 to 2019. The premature proportional mortality (PPM) due to CVD, IHD, and CBVD was determined for Niterói (very high HDI) and Belford Roxo (medium HDI). Data was analyzed by multiple linear regression using Excel and SPSS version 21 (significance accepted if $p<0.05$), PPM being the dependent variable, while sex and race were the independent variables. Similar analyses were conducted, including the cities as independent variables. **RESULTS:** PPM due to CVD corresponded to 34.1% of all CVD deaths in Niterói and 51.8% in Belford Roxo. The coefficient of determination (r^2) resulting from the model was 0.65 ($p<0.01$). Equivalent findings were observed for IHD (PPM= 37,2% in Niterói vs. 56,6% in Belford Roxo, $r^2 = 0.65$) and CBVD (PPM= 31,4% in Niterói vs. 48,3% in Belford Roxo, $r^2 = 0.48$) outcomes. According to the regression coefficients (β), the influence of sex and race in the PPM due to IHD was similar (β= -0,57 and +0,58). Race had a more substantial impact than sex in the case of PPM due to CVD (β= +0,61 and -0,53, respectively) and CBVD (β= +0,61 and -0,35, respectively). Considering the influence of the cities in the outcomes, the r^2 values found were higher (0.78, 0.78, and 0.69 for CVD, IHD, and CBVD, respectively, $p<0.01$). Sex and race continued as variables with the most significant impact on PPM due to IHD (β= -0.57 and +0,58). Additionally, race remained the more decisive influence in PPM due to CVD (β= +0,58) and CBVD (β= +0,61). **DISCUSSION/CONCLUSIONS:** Including the cities as an independent variable, the adjustment of the variables to the model was more robust. Data suggest that sex and race impact PPM due to CVD, IHD, and CBVD differently but, in all cases, in a HDIm-independent manner. This work has the potential to contribute to diagnosing susceptible groups in the general population, enabling the improvement of health policies to prevent and control CVD.

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ETHICS COMITEE APPROVAL: CAAE 45816721.8.0000.5243, number 4.797.173

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R020

SERUM UREA TO CREATININE RATIO PROGNOSTICS HOSPITALIZATIONS AND DEATH IN PATIENTS WITH CHRONIC HEART FAILURE WITH LOW LEVELS OF NT-PROBNP DESPITE RENAL FUNCTION

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BACKGROUND: There is a lack in identify patients with heart failure (HF) in risk of death and hospitalization in chronic scenario even in use of N-Terminal B-type Natriuretic Peptide (NT-proBNP), a marker of cardiac wall stress. Markers of renal function emerging as tool in assess how the kidneys deal with water and sodium[1]. Serum Urea to Creatinine Ratio (UCR)[2], estimated Glomerular Filtration Rate (eGFR) and Urinary Albumin to Creatinine ratio (UAC) have prognostic in cardiovascular and renal patients[3]. **OBJECTIVES**: We sought to describe the performance of urinary markers in the prognosis of patients with chronic HF compared and, in addition to NT-proBNP. **METHODS:** We enrolled consecutively and followed up eighty-seven patients with chronic HF from outpatient clinic at Antônio Pedro Hospital of Fluminense Federal University in this prospective study. Patients with reduced left ventricular ejection fraction (LVEF <40%), slightly reduced (LVEF 41-49%), and recovered (LVEF currently ε50% but previously reduced) were eligible for the study. At the time of inclusion, we collected clinical, electrocardiographic, and echocardiographic data as well as blood and urinary sample. The mean follow-up time was 340±170 days. The primary endpoint was time to first event, a combination of cardiovascular death or hospitalization for HF. We used Minitab 19.2020 (Minitab LLC, USA) to perform descriptive and multivariate analysis in addition to receptor operator characteristics (ROC) curves (with cutt-offs points) and survival plots. **RESULTS:** Mean age was 66±12 years, 53 (61%) were men, and mean LVEF was 37.5±11.8%. Thirty-nine patients had NT-proBNP above the cutt-off against 48 below (*p*=0,335). Mean UCR in patients with and without outcomes was 47,7±14,1 vs 38,8,3±10, respectively, p=0,001. The median UAC was 30.3 [interquartile range 2.9-91.7] vs 11.3 [3.9-27.5]mg/g, p=0.26. The estimated glomerular flow rate did not show difference between groups (p=0.160). In the multivariate analysis using the Cox proportional hazards model, the independent predictors of events were UCR > 43.52, with a hazard ratio (HR) of 4.45 (95% confidence interval [CI] 1.1-17.6), p= 0.034 and UAC >32.1 mg/g, HR 8.4 (95% CI 1.8-38.4), p= 0.006. NT-proBNP had an area under the curve (AUC) 0.648, p=0.022 in this sample with a cut-off of 1846pg/mL. The UCR had AUC 0.721, p<0.001 and the cutoff >43.52 had a sensitivity of 72% and a specificity of 71%. The UAC had an AUC 0.598, p=0.310 (cutoff>32.1mg/g). ROC curves of UCR and NT-proBNP did not shown difference (DeLong test=0.358). We tested UCR performance above and below cutt-off of NT-proBNP to assess its utility. In High-NT-proBNP group (N 39), the UCR did not differ from NT-proBNP in predict outcomes (Log Rank (Mantel-Cox p=0.318). In Low-NT-proBNP group (N 48), UCR shows HR 4.28 (CI 1.97-9.28) (Log Rank (Mantel-Cox p=0.0002) for outcomes. **CONCLUSION:** In the present study, UCR and UAC were an independent predictor of events in chronic HF, regardless of usual clinical variables and natriuretic peptides. UCR was usefull in discriminating patients with righ risk of hospitalization and death in low NT-proBNP group.

FINANCIAL SUPPORT: No external financing.

ETHICAL COMMITTEE APPROVAL: Medical School of Fluminense Federal University-Antônio Pedro Hospital Ethical Committee Approval nº 3.448.328.

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R021

CARDIOGENETIC CENTER OF HOSPITAL UNIVERSITÁRIO ANTONIO PEDRO AND RESULTS OF THE CHARISMA REGISTRY

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INTRODUCTION: Pediatric cardiomyopathies constitute a group of rare disease (1:100000 children), present high morbidity and mortality, being the main indication for heart transplantation in childhood. Despite varied etiology, genetic changes are important in its pathophysiology[1,2,3]. There is a large gap in knowledge of epidemiological characteristics in Brazil and Latin America, where there are no studies on the topic[4]. With advances in precision medicine, it is essential to develop centers that integrate medical genetics and clinical cardiology to better approach this group of patients. **OBJECTIVES:** Present the results of the Charisma Registry (Registry of Children and Adolescents with Cardiomyopathy and Myocarditis). **METHODS:** Descriptive study of a cohort of patients from the metropolitan region II of State of Rio de Janeiro, between March 2019 and August 2023. The inclusion criteria was: cardiomyopathies in all phenotypes, with symptoms starting in childhood or adolescence (zero to 19 years old). Participants were evaluated and their data collected at the cardiogenetics outpatient clinic by a pediatric cardiologist and a geneticist. The variables analyzed were: age at onset of symptoms, gender, phenotype on echocardiogram and etiological diagnosis. The outcomes analyzed were development of HF, arrhythmias, indication for heart transplant and death. The molecular study was made possible through co-participation with the National Cardiovascular Genomics Network (RENOMICA). **RESULTS:** Total of 46 participants, with a mean age of 5,45 years (0 to 18 years) and standard deviation of 5.28 years (57% male). Boys were diagnosed earlier than girls (5,3 vs 5.9 years). The main phenotypes were: dilated (DCM) and hypertrophic cardiomyopathy (HCM), both representing 32.7% of cases (n=15), followed by non-compacted cardiomyopathy (NCCM) (26.1%, n=12), other phenotypes were: restrictive cardiomyopathy (n=1), arrhythmogenic (n=2) and non-dilated hypokinetic (n=1). The majority (n=27, 58%) were diagnosed due to cardiovascular signs and symptoms, such as heart failure (n=11), chest pain (n=6), arrhythmia (n=3), syncope (n=1) and auscultation of heart murmurs (n=6); followed by findings in patients undergoing investigation of genetic syndromes (n=12, 23%) or family screening (n=3), 4 were diagnosed during pre-participation assessment. Genetic investigation was carried out in 34 participants (73%), the diagnosis was confirmed in 17 (50%), in 3 had negative result and in 4 the diagnosis was inconclusive (VUS), 9 are still awaiting result. Twelve didn´t undergo any genetic testing, of which 8 received a clinical diagnosis of probable myocarditis. The main outcomes observed were: death (n=5, 10.87%), four with DCM, indication for heart transplant (n=4, 8.7%), 3 DCM and 1 NCCM, implantable cardioverter defibrillator (n=3, 6.52%). **DISCUSSION/CONCLUSIONS:** Pediatric cardiomyopathies have their own characteristics and due its varied clinical presentation, diagnosis is a challenge[5, 6]. This cohort provides relevant data, demonstrating the heterogeneity of clinical presentation, with emphasis on HF and occurrence of potentially fatal complications such as ventricular arrhythmias. The indication for heart transplant corresponded to 8% of cases, with 3 patients dying. Total mortality was 10%. The genetic etiology was highlighted, making individualized therapeutic plans possible. Implementation of cardiogenetics centers is essential for a better approach and monitoring of patients and their families.

FINANCIAL SUPPORT: none

ETHICS COMITEE APPROVAL: CAEE 93874218.2.0000.5243

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R022

MYOCARDITIS AND PERICARDITIS IN COVID-19 AND MULTISYSTEM INFLAMMATORY SYNDROME: A CUT FROM THE CHARISMA REGISTRY

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INTRODUCTION: Myocarditis and pericarditis are inflammatory processes of the myocardium and pericardium, related to viral infections, autoimmune diseases, and hyperstimulation of the immune system, among other etiologies.1 The Multisystem Inflammatory Syndrome related to the pandemic (MIS-P) was described by the WHO in 2020 2 as a hyperinflammatory process similar to Kawasaki disease and toxic shock syndrome. The occurrence of myocarditis and pericarditis has been documented in MIS-P and COVID-19 in children and adolescents since the earliest studied cases.3 4 5 According to the WHO recommendation, diagnosis through biomarkers, characterization, and evaluation of myocardial and pericardial involvement should be performed in all patients meeting the criteria proposed by the WHO.1 Early diagnosis of myocardial insult allows complete recovery in most cases.7 8 **OBJECTIVES:** To understand the incidence of myocarditis, its clinical and laboratory characteristics, and outcomes in children and adolescents with MIS-P and COVID-19. **METHODOLOGY:** Observational study (registry), cohort type, with longitudinal follow-up. The sample was obtained from the registry of myocarditis and cardiomyopathies in children and adolescents (ChARisMA). The study population consists of patients aged zero to 19 years old with clinical and/or imaging diagnosis of myocarditis. Clinical outcomes included the development and progression of heart failure, presence of arrhythmias and stroke, indication for heart transplant, and death. All patients had their informed consent signed by their guardians, and the study obtained approval from the local Ethics Committee under CAAE: 58056516.0.0000.5264. **RESULTS:** In this cohort, we present data from a single center with recruitment of 36 children, of whom 58.2% had myocarditis and 8.3% pericarditis, with the majority being male (78.9%) and a mean age of 3.4 years. Intensive care unit admission was necessary for 58.3%, and 19.4% required inotropic support. Intravenous immunoglobulin was administered in 94.4% with adjunct corticosteroid therapy in 100%. Elevated NT-proBNP showed a positive correlation with cardiac MRI (p=0.001) despite a negative troponin. Only two patients (5.5%) presented cardiogenic shock upon admission. The ECG was a relevant tool in the emergency room: ST segment elevation, QRS fragmentation, and prolonged PR interval were described in 84.2% of the 19 affected patients. Only 11% had echocardiographic alterations (coronary artery aneurysm - CAA (2), pericardial effusion (2), and left ventricular dysfunction). Edema was the most common finding in MRI, followed by late enhancement and pericardial effusion in 26.3%. The anterior, lateral, and inferior bases were the most affected wall segments (68.4%). **CONCLUSION/DISCUSSION:** Acute myocarditis and pericarditis are the most common cardiac complications in patients with MIS-P. Despite their similarity to Kawasaki disease, in our data, only two patients had CAA, both demonstrating edema in the MRI. MRI proved relevant in documenting the extent of the injury, and biomarker monitoring proved to be an important tool in observing the onset of the lesion. This single-center cohort underscores the relevance of conducting epidemiological registries for understanding myocardial and pericardial inflammation and its uniqueness.

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R023

IN SILICO DRUG REPURPOSING TO TREAT CARDIAC, RENAL, AND RESPIRATORY COMPLICATIONS OF MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN WITH COVID-19.

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INTRODUCTION: Although only 20-30% of children and adolescents infected with the new coronavirus are symptomatic, Multisystem Inflammatory Syndrome in Children (MIS-C) is a worrying condition with a mortality rate of around 1%. Furthermore, late immune response affects the cardiac, renal, and respiratory systems due to massive inflammation[1-3]. As such, manifestations are considered infrequent; drug repositioning is a more tangible strategy for developing a specific treatment for MIS-C than drug development encompassing innovative molecules. Network medicine, a scientific area that applies systems biology concepts and network theory tools, embraces promising strategies to identify repurposable drugs in the pharmaceutical market or under investigation[4, 5]. **OBJECTIVE:** Thus, this study aims to identify repositionable drugs to treat MIS-C cardiac, respiratory, and renal complications in pediatric patients with COVID-19 through network medicine. **METHODS:** The present *in silico* proposal involves 3 phases: Phase I - Literature mining for omics data collection about the complications of interest in individuals under the age of 19; Phase II - Recognition of relevant and common genes/proteins related to these complications, biological networks building and target mapping; Phase III - Identification of drugs capable of modulating the mapped drugable targets. **RESULTS:** After excluding repeated articles, 4270 documents of interest published from January 2019 to June 2022 remained. A simple random sampling enabled the selection of 20% for further analysis (854 papers). Literature mining was performed using the OnTheFly2.0[6] tool, generating 116 lists with several biological entities. After a unique ensemble identification check, the mined genes and respective products will be ranked according to the number of citations. All lists were processed and the number of biological entities and multiplicity have were not evaluated yet. **DISCUSSION/CONCLUSION:** We expect to conclude this step soon, enabling the continuation of the proposal for a confident drug repositioning for MIS-C treatment.

FINANCIAL SUPPORT: Capes.

ETHICS COMITEE APPROVAL: As an in sílico study, this approval is not necessary.

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R024

IMPACT OF SUBCHRONIC ADMINISTRATION OF ENDOCRINE DISRUPTOR, TRIBUTYLTIN CHLORIDE, IN THE CARDIOVASCULAR SYSTEM OF WISTAR RATS

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INTRODUCTION: Tributyltin chloride (TBT) is widely used in agricultural fungicides, biocides as well as in antifouling paints on marine vessels leading to environmental pollution[1]. TBT induces an endocrine syndrome known as imposex[2]. In female rats, TBT has been shown to promote ovarian dysfunction and a reduction in estrogen levels. Estrogen has cardioprotective function, causing endothelium-dependent and independent vasodilation of isolated coronary arteries[3,4]. TBT exposure has been associated with many different toxicologic effects. TBT presents cytotoxic and hepatotoxic actions, promoting changes in lipid metabolism and hepatic steatosis[5], damage to the urinary[6] and immune system[7]. The administration of TBT to rats induces vascular dysfunction due to oxidative stress and morphological damage, enhancing cardiovascular risk factor[8]. **OBJECTIVES:** The present study aims to evaluate the properties of the sub chronic administration of TBT in the cardiovascular system. **METHODS**: The animal protocols were approved by the Ethics Committee for Experimental Research of the Federal Fluminense University (CEUA/UFF1781110419). Adult male (250- 300g) Wistar rats were randomly divided into two groups each (n=12, for each group): Control group (C) and TBT 1000ng/kg/day for 30 days administrated via gavage. On the 31° day, the animals were euthanized by cervical dislocation under ketamine and xylazine anesthesia. Tissues were removed for functional and molecular analyses. Aortas were dissected for vascular reactivity. Data were analyzed using Student's t test, $p<0.05$. **RESULTS**: In the vascular reactivity, the TBT group 1000 ng/kg in males presented an increase in the contraction (-LogCE50: 7.319 ± 0.11) mediated by phenylephrine, when compared to the control group (-LogCE50: 6.812 ± 0.16). In the relaxation response promoted by acetylcholine, presented a decrease in the relaxation when compared to control (-LogCE50: 86.12 ± 2.70; 101.3 ± 3.74), respectively. In western blot assays of cardiac homogenates from male rats, we have observed an increase in the expression of inflammatory proteins: iNOS (TBT: 2.587 ± 0.33 x C: 1.472 ± 0.08) and NFkB (TBT: 1.949 ± 1.10 x C: 1.494 ± 0.11), when compared to control group. TBT also promoted an increase in oxidative stress in cardiac homogenate (0.5837 ± 0.12) when compared to control group (0.1483 ± 0.02). In addition, TBT was able to promote an increase of antioxidant proteins expression such as catalase (TBT: 1.687 ± 0.19 x C: 0,660 ± 0,29) and transcription factor, Nrf2 (TBT: 1.611 ± 0.25 x C : 0,287 ± 0,06), when compared to control group. No significant differences were observed in proteins such as GPx and SOD. **DISCUSSION/CONCLUSION:** This study showed potential cardiovascular toxicological effects associated to TBT exposition. We were able to demonstrate the effects of TBT on vascular reactivity, which showed a decrease in the vasodilatory response as well as an increase in the contraction response. TBT also promoted an increase in the inflammatory response and oxidative stress in cardiac homogenate. Our results indicate that TBT exerts deleterious effects on the cardiovascular system, contributing to cardiovascular diseases.

FINANCIAL SUPPORT: CNPq, CAPES, PROPPI-UFF, FAPERJ.

ETHICS COMITEE APPROVAL: CEUA-UFF 1781110419.

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R025

EFFECTS OF SUBACUTE EXPOSURE TO TRIBUTYLTIN CHLORIDE ON CARDIAC FUNCTION IN WISTAR RATS

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INTRODUCTION: The tributyltin chloride (TBT) is among the organotin compounds of anthropogenic origin with broad use, found in agricultural fungicides, biocides, and anti-fouling paints for marine vessels. The primary consequence of its use is marine pollution[1], and due to its highly hydrophobic nature, it exhibits bioaccumulation characteristics[2], exposing humans to its risks through the consumption of contaminated food[3] and water[4]. Studies have shown deleterious effects of TBT on the cardiovascular system[5], such as atrioventricular block, sinus tachycardia, T wave abnormality, highlighting an environmental risk for the development of cardiovascular diseases. However, its pathophysiological mechanism in the cardiovascular system remains unknown. **OBJECTIVES:** Evaluate the effects of TBT on the cardiovascular system, mainly on the intracellular calcium machinery and apoptosis. **METHODS:** The animal protocols were approved by the Ethics Committee for Experimental Research of the Federal Fluminense University (CEUA/UFF1781110419). Male adult Wistar rats were divided into 2 groups (n=12, each group): control group (C) and TBT group at 1000ng/kg/day for 30 days administered via gavage. On the 30° day, the animals were subjected to functional analyzes such as echocardiogram and electrocardiogram. On the 31° day, the animals were euthanized by cervical dislocation under ketamine and xylazine anesthesia. Tissues were removed for molecular analyses. **RESULTS:** No significant differences in body weight and weight gain were observed in the TBT treated groups when compared to the control. However, there was a decrease in the relative heart weight in the TBT group (0.0027 ± 3.534e-005). TBT group presented an increase in protein expression associated with Ca^{++} influx such as LTCC (2.251 ± 0.52; 0.9871 ± 0.08), SERCA (2.394 ± 0.08; 1.901 ± 0.16), PMCA (3.777 ± 0.71; 1.685 ± 0.15) and NKA (3.545 ± 0.22; 2.558 ± 0.18) when compared with C group. In TBT group, we also observed an increase of proteins expression associated with apoptosis such as Caspase 3 (1.616 ± 0.05; 1.247 ± 0.10), Bax (1.237 ± 0.23; 0.226 ± 0.06), p38 (1.827 ± 0.35; 0.862 ± 0.09), and the JNK/pJNK ratio (1.469 ± 0.22; 0.535 ± 0.17) when compared to the control group. Electrocardiographic analyzes demonstrated an increase in the P wave (32.60 ± 0.60; 27.56 ± 1.81) and the PR interval (41.20 ± 1.04; 34.44 ± 2.78) in the TBT group when compared to the control, respectively. **DISCUSSION/CONCLUSIONS:** TBT administration promoted cardiovascular dysfunctions related to calcium influx and cell apoptosis with macroscopic repercussions, leading to a decreasing of heart weight and changes in electrical conduction. Together, these results suggest that TBT can promote cardiac changes at molecular and functional levels, contributing to harmful effects in cardiovascular system.

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ETHICS COMITEE APPROVAL: CEUA-UFF 1781110419.

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R026

RELATIONSHIP BETWEEN VITAMIN D AND DEPRESSIVE SYMPTOMS IN PATIENTS WITH HEART FAILURE

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INTRODUCTION: Heart failure (HF) is a serious public health problem on a global scale. This syndrome is estimated to affect 26 million people worldwide[1]. Vitamin D plays a role in regulating mood and levels of depressive symptoms. Symptoms of depression and vitamin D deficiency are common in patients with HF[2]. **OBJECTIVES**: Investigate the relationship between vitamin D deficiency and depressive symptoms in patients with HF. **METHODS**: This is a cross-sectional observational study with adult and elderly patients, of both sexes, hospitalized for HF, with data collected up to 48 hours after admission to a private hospital in the city of Rio de Janeiro. The 9-item Patient Health Questionnaire (PHQ 9)[3] was carried out to assess the presence of depression symptoms, adopting a cutoff point ≥ 10, that is, moderate, moderately severe and severe symptoms, as an indication of clinically relevant depression. Vitamin D was classified by serum concentrations, collection was carried out in the first 48 hours of hospitalization, as deficiency (≤ 20 ng/mL), insufficiency (21 ng/mL - 29 ng/mL) and adequate (≥ 30 ng/mL and < 100 ng/mL)[4]. The chi-square test was performed and a significance level of $p<0.05$ was adopted. **RESULTS**: 41 patients were analyzed, 22 (52.4%) were male and the average age was 74.33 ± 14.07 years. According to PHQ 9, 18 (42.8%) patients were above the cutoff point for depression screening. From serum vitamin D tests, it was observed that 35.71% (n=15) had vitamin D insufficiency and 23.81% (n=10) deficiency, covering a total equal to 61% (n=25) of inadequacy. There was no association between serum vitamin D concentrations and depression ($p=0.187$). **DISCUSSION/CONCLUSIONS**: Depressive symptoms correlate with low quality of life and lower long-term functional status in patients with HF, making it essential to evaluate these symptoms as part of the multimodal treatment plan in these patients[5]. HF has been associated with vitamin D deficiency, highlighting a high prevalence, as well as an inverse correlation between serum vitamin D levels with left ventricular function and severity of the disease[6]. A cross-sectional analysis in North American adults concluded that vitamin D deficiency is associated with an increased risk of depression[7]. In another study, patients with HF and vitamin D deficiency had higher levels of depressive symptoms compared to those with normal levels[2]. In the present study, a high prevalence of symptoms of depression and inadequate vitamin D was found, however, there was no association between depression and vitamin D insufficiency and deficiency. This result may be due to the small sample size to date.

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ETHICS COMITEE APPROVAL: The study was approved by the Ethics and Research Committee (CAAE: 61162522.2.0000.5243).

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R027

RELATIONSHIP BETWEEN ANEMIA, IRON DEFICIENCY AND HANDGRIP STRENGTH IN PATIENTS HOSPITALIZED WITH HEART FAILURE

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INTRODUCTION: Anemia is a common comorbidity in heart failure and worsens its prognosis and functional capacity. Regardless of the presence or absence of anemia, iron deficiency (ID) is a problem associated with heart failure that is often unrecognized[1]. Decline in muscle strength and muscle density is also associated with anemia, which results in a decline in mobility, self-care, and usual activities. Handgrip strength (HGS) is also related to the strength of other muscle groups and, therefore, can be a good index to represent general strength[2]. **OBJECTIVES**: To investigate the relationship between anemia and iron deficiency with muscle strength in patients with HF. **METHODS**: This is a cross-sectional observational study with adult and elderly patients, in which data were collected up to 48 hours after admission to a private hospital in Rio de Janeiro. Anemia was defined as hemoglobin <12g/dL in women and <13 g/dL in men, iron deficiency was defined as ferritin <100 ng/mL or between 100-300 ng/mL with transferrin sat <20%[3]. To assess muscle strength, handgrip strength was performed, and the cutoff point is < 27Kg/f in men and <16 Kg/f in women[4]. Fisher's exact test was performed and a significance level of $p<0.05$. The study was approved by the Ethics and Research Committee (CAAE: 61162522.2.0000.5243). **RESULTS**: The study has so far had 77 participants, 57.14% (n=44) male and the average age was 73.77 ± 16.04 years. It was observed that 77.92% (n=60) have hypertension systemic artery, 46.75% (n=36) have dyslipidemia and 42.85% (n=33) have diabetes mellitus, 57.14% (n=44) have anemia, 59.74% (n=46) have iron deficiency and 38.96% (n=30) have iron deficiency and anemia and 44.15% (n=34) have low handgrip strength (HGS). No association was found between low muscle strength and the presence of anemia and iron deficiency ($p=1.000$). **DISCUSSION/CONCLUSIONS**: Iron deficiency has a prevalence of 59% in patients with HF, even in non-anemic patients, and has emerged as an important factor in increased mortality in patients with HF[4,5]. An association between anemia and low HGS was found in the literature[6], with the HGS test being an effective screening tool for anemia in the elderly[7]. Furthermore, in a cross-sectional study, patients with HF had significantly lower HGS than those without HF[8]. Wang et al. observed that patients with HF who had low HGS were associated with a higher risk of the composite outcome of readmission or mortality due to HF[9]. In the present study, no association was found between low muscle strength and the presence of anemia and iron deficiency.

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ETHICS COMITEE APPROVAL: The study was approved by the Ethics and Research Committee (CAAE:61162522.2.0000.5243).

R028

PHASE ANGLE ASSESSMENT IN HEART FAILURE: A PROMISING APPROACH FOR NUTRITIONAL ASSESSMENT

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INTRODUCTION: Assessing the nutritional status of patients with heart failure (HF) is a complex task, and there is currently no standardized method for this purpose. In this context, the evaluation using the phase angle (PhA) may hold promise, as it considers hydration levels[1-3]. **OBJECTIVE**: Correlate the PhA with parameters for nutritional status analysis in patients with decompensated HF, stratifying by sex. **METHODS**: This is an observational study with hospitalized patients with decompensated HF in a private hospital. Patients aged ≥20 years who had been diagnosed with HF were included, while those with a pacemaker, limb amputation, or other factors preventing bioelectrical impedance analysis (BIA) were excluded. Body mass, height and calf circumference (CC) were measured. PhA was calculated using BIA (800 µA, 50 kHz, Biodynamics) and body mass index (BMI) was calculated[2]. Additionally, albumin, C-reactive protein (CRP), and N-terminal pro-B-type natriuretic peptide (NT-proBNP) test results were collected from the medical records. Data was collected within the first 48 hours of hospitalization. The results were analyzed using GraphPad Prism 8.0 software, presented as median (interquartile range) or mean ± standard deviation and p ≤0.05 was considered statistically significant. **RESULTS**: Data from 71 patients were analyzed, with 53% (n=38) being male, which was stratified by sex. Male: age 72 (27)years, left ventricular ejection fraction (LVEF) 32.00 (22.00)%, CRP 1.5 (2.8)mg/dL, NT-proBNP 3,910 (10,960)pg/mL, albumin 3.7±0.5g/dL, CC 36.1±5.9cm, BMI 27.8 (8.1)kg/m², PhA 6.1 (2.2)º. Female: age 83 (18)years, LVEF 57.50 (32.48)%, CRP 1.2 (3.5)mg/dL, NT-proBNP 6,000 (6,650)pg/mL, albumin 3.5 ± 0.6g/dL, CC 36.0 ± 6.6cm, BMI 27.4 (10.3)kg/m², PhA 5.0 (1,2)º. In the comparison between sexes, statistically significant differences were observed for age (p=0.0088), LVEF (p=0.0069), and PhA (p=0.0175), while CR, NT-proBNP, albumin, CC, and BMI did not show significant differences. When correlating with PhA, the following results were found for male: age (r=-0.5134 and p=0.0010), CRP (r=-0.1882 and p=0.2789), NT-proBNP (r=-0.5244 and p=0.0007), albumin (r=0.3737 and p=0.0208), CC (r=0.3682 and p=0.0229), BMI (r=0.1913 and p=0.2500). For female: age (r=-0.2352 and p=0.1876), CRP (r=-0.2009 and p=0.2784), NT-proBNP (r=-0.3300 and p=0.069), albumin (r=0.0888 and p=0.6232), CC (r=0.3305 and p=0.0603), BMI (r=0.2182 and p=0.2226). **DISCUSSION/CONCLUSIONS**: Age, in male, and sex impacted PhA values. The older male patients had lower PhA values, while female patients had even lower PhA values. This could be explained by the reduction in total body water and muscle mass with age, particularly in female. The positive correlation of PhA with CC and albumin in male suggests that a lower PhA is associated with poorer nutritional status[3]. The negative correlation with NT-proBNP in male indicates the relationship between PhA and congestion, where higher congestion is associated with lower PhA[3]. Since BIA is a quick and easily manageable method capable of assessing nutritional and hydration status, further studies are essential to incorporate this tool into clinical practice, providing agility and objectivity to medical and nutritional patient care.

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R029

MYOCARDITIS IN CHILDHOOD: A CASE REPORT

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INTRODUCTION: Myocarditis in childhood and adolescence consists of a diffuse or focal inflammation of the myocardium, which can be caused by various factors, but is usually attributed to infectious agents or chronic inflammation. Myocarditis can progress to heart failure (HF), cardiac arrhythmias, chronic cardiac dysfunction, systemic complications, and eventually lead to death. Myocarditis is the most significant cause of HF in pediatrics. Early diagnosis facilitates the adoption of measures to prevent disease progression and its complications. Often, diagnosing myocarditis in a child can be challenging because it presents sporadically and atypically. Electrocardiography (ECG), echocardiography, and biomarkers related to heart failure can provide information on the severity of the condition and assist in the appropriate management of the patient. **CASE DESCRIPTION:** A 3-year-old female preschool patient presented to the hospital service in Rio das Ostras, a municipality in Rio de Janeiro, with respiratory discomfort that progressed to pneumonia, along with three episodes of syncope. The patient was transferred to the Complexo Hospitalar de Niterói (CHN) in a severe state, with blood pressure: 80/38 mmHg, heart rate: 172 bpm, respiratory rate: 30 breaths per minute, on mechanical ventilation. Non-sustained supraventricular tachycardia was observed (Figure 01), echocardiography showed ventricular dysfunction and overload, as well as multiple organ dysfunction. Biomarker testing, such as high-sensitivity Troponin T, was requested, indicating acute injury and heart failure. This revealed a state of cardiogenic shock. Given the clinical signs and the illustrated results, the diagnosis is suggestive of myocarditis possibly caused by viral pneumonia. **CONCLUSION:** Viral pneumonia infection can be a cause of myocarditis, as the infectious agent can lead to myocardial injury through direct invasion, the production of cardiotoxic substances, or it can occur due to an exacerbation of the immune response. In cases of myocarditis progressing to HF, monitoring and management of acute heart failure are essential. Additional tests, such as echocardiography and ECG, can assist in the diagnostic investigation. The control and progression of patients are important, as there is still limited evidence in the literature regarding the late evolution of myocardial dysfunction in these patients.

ETHICS COMITEE APPROVAL: The patient had his informed consent signed by his guardians and the study was approved by the local Ethics Committee under CAAE: 58056516.0.0000.5264.

R030

ASSESSMENT OF INFLAMMATORY MARKERS, MITOCHONDRIAL DNA, CARDIOVASCULAR RISK FACTORS AND EVENTS IN INDIVIDUALS ABOVE 50 SUBMITTED TO DIFFERENT ANTIRETROVIRAL THERAPIES

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INTRODUCTION: Progress in antiretroviral therapy (ART) has increased the life expectancy of people living with the human immunodeficiency virus - HIV (PLWH)[1]. Cardiovascular events represent the primary cause of death in PLWH, and some antiretroviral drugs present adverse effects related to increased cardiovascular risk[2]. Mitochondrial DNA (mtDNA) levels in plasma may be increased in PLWH and involved in the pathogenesis of systemic inflammatory response syndrome,[3-5] leading to cardiovascular diseases (CVD)[6]. **OBJECTIVES:** This study aims to evaluate the prevalence of cardiovascular events in PLWH above 50 using different ART, associating this outcome with inflammation markers, mtDNA serum levels, and other parameters related to cardiovascular risk**. METHODS:** The study consists of two phases, including female and male participants from University Hospital Gaffrée e Guinle - Brazil. Phase I: PLWH without pre-existing CVD were divided into four groups according to ART (Group 1 - Dolutegravir, DTG; Group 2 - Darunavir, DRV; Group 3 - DTG + DRV; Group 4 - Atazanavir, ATV). Healthy individuals (Group 5) constitute the control. Phase II: ART groups (Group 1 - Dolutegravir, DTG; Group 2 - Darunavir, DRV; Group 3 - DTG + DRV). Healthy individuals with and without CVD (Groups 4A and 4B) constitute the control. Anthropometric and laboratory parameters are registered, as well as Dyslipidemia, Systemic Arterial Hypertension, and Diabetes Mellitus diagnosis. Phase I embraces a retrospective design (July 2017 to June 2020) with data collection from medical records. Phase II encompasses a prospective approach, including measuring serum inflammatory markers and mtDNA. The individuals are evaluated at different times throughout 30 months of TARV. Results are presented as mean, standard deviation, or relative frequency, followed by proper statistical analysis using Microsoft Excel or Graph Pad Prism 7.0. **RESULTS:** One hundred and fifty medical records have been analyzed so far. There were significant differences in HDL levels between groups 4 and 5 (40.00 ± 11.63mg/dL vs 51 ± 9.78mg/dL, p=0.02061). Patients from group 5 presented lower levels of triglyceride compared to group 3 (99 ± 21.79mg/dL vs 183 ± 83.85mg/dL, p=0.01892). The prevalence of Dyslipidemia in group 3 was higher than 50%. A lower incidence was registered in groups 2 (6%; p=0.0031436) and 4 (11%; p= 0.00041794). Till now, ninety-five participants have been selected to join Phase II (Group 1=28; Group 2=23; Group 3=27; Group 4B=17). **DISCUSSION/CONCLUSIONS:** Data from Phase I shows that lipid profile is worse in users of ATV and DTG + DRV. Additionally, DTG + DRV seem to contribute to a higher prevalence of Dyslipidemia. Recruitment in phase II is still in course.

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ETHICS COMMITTEE APPROVAL: Fluminense Federal University report n 5.385.106, 05/03/2022.

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R031

GROWTH DIFFERENTIATION FACTOR-15 IS ASSOCIATED WITH SEVERITY PARAMETERS IN PATIENTS ADMITTED TO THE HOSPITAL WITH ATRIAL FIBRILLATION

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Background: Growth differentiation factor 15 (GDF-15) is a biomarker of inflammation, cellular aging and oxidative stress[1,2]. Atrial fibrillation (AF) is the most prevalent cardiac arrhythmia; when present, it increases the risk of death, dementia, heart failure (HF) and thromboembolic events, notably stroke[3,4]. The evidence linking GDF-15 to the prognosis of patients with AF derives mainly from retrospective analysis of classic clinical trials that consolidated the safety and efficacy of direct-acting anticoagulants[2,5,6]. **Objectives:** We sought to assess the relationship of GDF-15 with severity parameters in patients hospitalized with atrial fibrillation (AF). **Methods:** Fifty hospitalized patients with a primary or secondary diagnosis of AF from two hospitals were included. GDF-15 was measured at baseline, as well as cardiac and inflammatory biomarkers. A comparison of baseline characteristics was performed in groups with high (above median) and low (below median) GDF-15 values. Correlations were made between the GDF-15 and other variables, using the Spearman method. The study was indexed in the Brazilian Clinical Trials Registry (ReBEC) under RBR-106xbn9s, and on the UTN platform under identification U1111-1286-6984. CEP FM/UFF (HUAP): 4.719.444. **Results:** Twenty-nine (58%) patients were male, and the mean age was 68.5±17.3 years. Twenty-eight (56%) had permanent AF and 18 (36%) had HF with reduced ejection fraction (LVEF<40%, HFrEF). The median GDF-15 was 2724 pg/mL (interquartile range 1116-5139). Patients with high GDF-15 values were older (77.5±9.7 vs 59±18.5 years, p=0.0001) and more likely to have hypertension (92.3% vs 70%, p=0.018) and permanent AF (69.2% vs 37.5%, p=0.016). They also had higher NT-proBNP values (4006 pg/mL [2156-7023] vs 816 [174-3814], p=0.0015), creatinine (1.2 [0.95-1.7] vs 1,0 [0.75-1.15], p=0.017) and C-reactive protein (3.1 [1.55-7.32] vs 1.25 [0.55-2.45], p=0.008). GDF-15 was higher in patients with HF (n=34 [68%]) vs non-HF (3126 [1737-6457] vs 774 [565-4074], p=0.01). Patients with HFrEF had higher levels of GDF-15 as compared with those with LVEF>40% (3019 [2012-7299] vs 1533 [784-4674], p=0.05). All risk scores were higher in patients with high GDF-15, namely CHA2DS2-VASC (4.5±1.6 vs 2.9±2.3, p=0.008), HAS-BLED (2.4 ±1.3 vs 1.3±1.1, p=0.0029), ORBIT (3.5±1.5 vs 1.7±1.5, p=0.0003) and MAGGIC (20.8 ±12.3 vs 11±11.2, p=0.006). There was a direct correlation between GDF-15 and NT-proBNP (r=0.5, p=0.002), D-dimer (r=0.52, p=0.002) and age (r=0.43, p=0.002). **Conclusion:** GDF-15 values were associated with parameters of greater severity in AF. GDF-15 may be useful as a prognostic marker and help anticoagulation management in AF patients.
Keywords: Atrial Fibrillation; Prognosis; GDF-15.

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“Não vai demorar
que passemos adiante
uma grande e bela
ciência, que faz arte
em defesa da vida”.

Carlos Chagas, 1928.