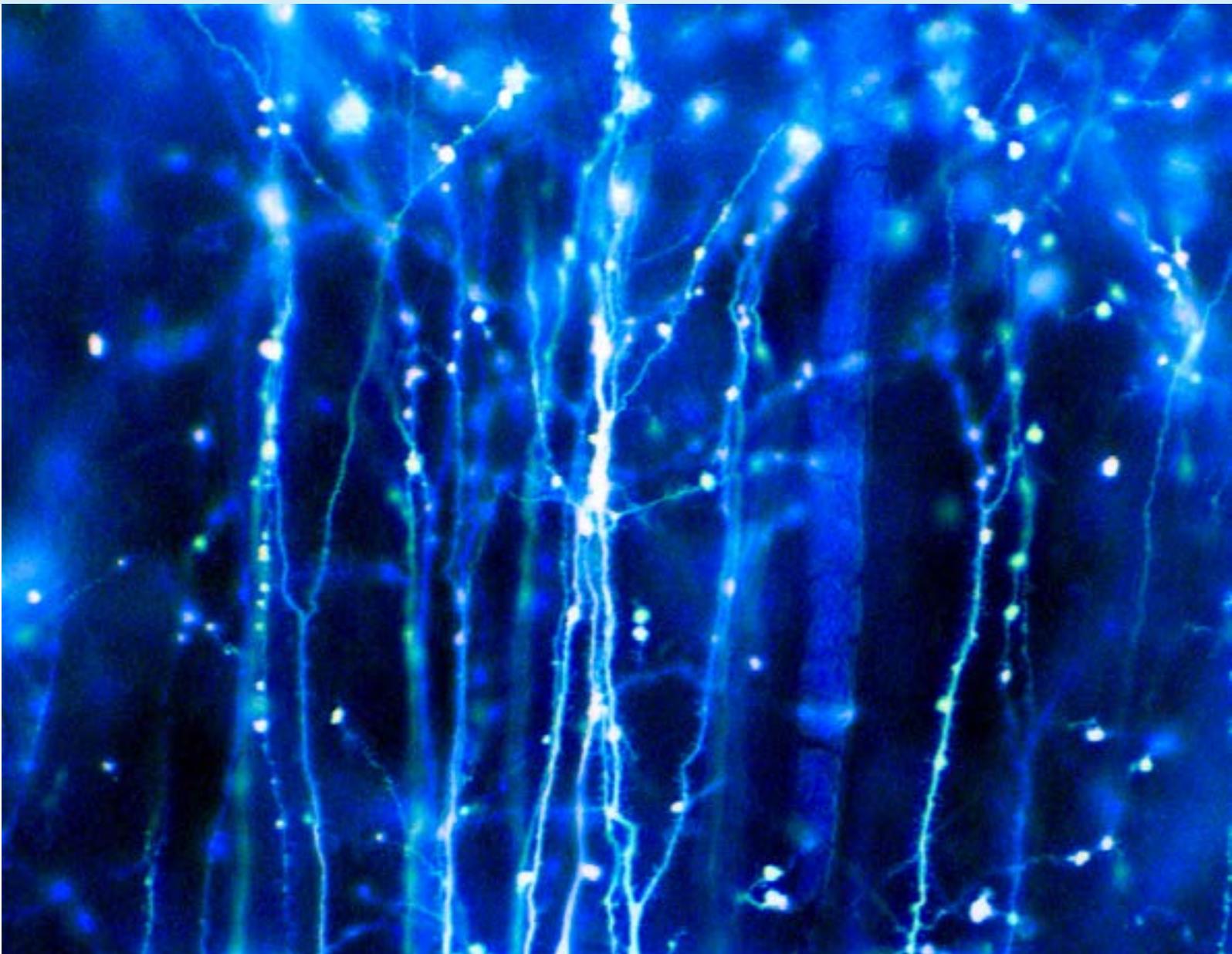


Physiological Mini Reviews

Special Issue
SCHCF + ALACF 2020 joint meeting
November 2020, Chile

13
Volume



Vol. 13, July - November, 2020
ISSN 1669-5410 (Online)
pmr.safisiol.org.ar





in WAT browning (PRDM16, PGC-1 α , PPAR γ) and UCP-1 in SAT compared with Ctrl and HFD groups. Moreover, Que partial and significantly increased brown adipose tissue weight compared to HFD and Ctrl groups, respectively. In L6 myotubes Que prevented palmitate-decrease GLUT4, PGC1- α and FNDC5 expression and irisin secretion and also prevented palmitate-downregulated mRNA levels of PGC-1 α and FNDC5. In addition, PGC-1 α siRNA transfection in L6 myotubes abrogated the effects of Que on FNDC5 expression. Conclusions: Overall, Que enhanced FNDC5/irisin pathway in muscle and L6 myotubes and enhances the expression of transcriptional regulators of browning and UCP-1 in the SAT of rats fed a HFD. These findings support the potential relevance of consuming Que-rich foods to attenuate high-fat diet-induced metabolic dysfunction. Supported by the Universidad Nacional de Cuyo [SIIP J094], Agencia Nacional de Promoción Científica y Tecnológica [PICTO 2016–0046, PICT 2018–03056] to M.V.P, and NIFA-USDA to P.O.

KR772CJ

Antiarrhythmic action of chronic melatonin in female rats

Natalia Jorgelina Prado^{1,2}, Caterina Gabriela Brescia¹, Adriana Miriam Carrión¹, Nicolás Federico Renna^{1,2}, Roberto Miguel Miatello^{1,2}, Emiliano Raúl Díez^{1,2}

(1) Universidad Nacional de Cuyo, Facultad de Ciencias Médicas, Centro Universitario s/n, Mendoza, Argentina.

(2) CONICET, IMBECU, Centro Universitario s/n, Mendoza, Argentina.

Introduction: Arrhythmias are complications during reperfusion of the ischemic myocardium. Acute melatonin is antiarrhythmic, but there is less information about females' animals receiving chronic treatment. Objective: We aim to evaluate the electrophysiological effects of melatonin in female rats. Methodology: Wistar Kyoto rats (WKY), ten weeks old, received melatonin dissolved in water (3-5 mg/kg/day, MEL) during 15 days. After this period, we evaluated the electrocardiogram in isolated hearts undergoing a 10 minutes regional ischemia, followed by reperfusion of 10 minutes. All procedures were approved by local Institutional Animal Care and Use Committees (106/2017). Results: Melatonin treatment shortened PR and QRS intervals and prolonged the QT interval and QT corrected for heart rate. Melatonin chronic treatment prevented the incidence of ventricular fibrillation during reperfusion (WKY 6/9; WKY+MEL 1/10; P=0.0198 by Fisher's exact test). Conclusion: Our results confirmed the cardioprotective effects of oral melatonin administration in female rats and showed electrocardiographic modifications compatible with increased conduction and delayed myocardial repolarization as possible antiarrhythmic mechanisms.

Universidad Nacional de Cuyo, SIIP project 06-J505

CP293FN

Impact of female sex hormones on autonomic nervous activity and in heart rate variability.

Juliana Rey Borbón¹, Henry Humberto León Ariza¹, María Paula Piñeros Clavijo¹

(1) Universidad de la Sabana, Cundinamarca, Medicina, Chía, Colombia.

Introduction: Heart rate variability (HRV) is understood as the variation in milliseconds between one heartbeat and another. This is influenced by the autonomic nervous system and the different conditions that determine an increase or decrease in the activity of the sympathetic or parasympathetic nervous system. This study aims to analyze the behavior of the variability of the heart rate, through the domains of time, frequency, and nonlinear analysis, and establish the possible influence of female hormonal stimulation taking into account the phase of the menstrual cycle. Methodology: In this study, a sample of 27 women volunteers who met the inclusion criteria were collected (age between 18 and 25 years old, regular menstrual cycle and not using oral contraceptives). An electrocardiogram (EKG) was taken using DII derivation for five minutes at two different times in the cycle: 1) menstrual phase, taken as the first day of menstruation, or the two days before it, and 2) ovulatory phase understood as day 14 \pm 2. It should be clarified, that the evaluation of HRV has a very low risk and this protocol was approved by the ethics committee of the Faculty of Medicine. Outcomes: As a result, during the menstrual phase the approximated entropy (ApEn) was 1.10 \pm 0.08 in contrast with the ovulation phase that was 1.15 \pm 0.08 with a statistical difference (p = 0.004) which suggests less activity of the parasympathetic nervous system during the menstrual phase. Conclusion: It was concluded that there is a relationship between the hormonal stimulus and the activity of the autonomic nervous system, being the most sensitive method for the evaluation of the activity of the approximated entropy. This study demonstrates once again the relationship between the regulatory systems (endocrine and autonomic nervous system).

Thanks to the biomedical physiology laboratory on campus at the University of La Sabana.

GK331LM

Evaluation of the pregnant women rectus abdominis muscle function –An ex vivo contractility analysis using myography

David Reyes¹, JF Floriano¹, SBCV Quiroz¹, SMB Costa¹, RLS Hallur¹, EMA Enriquez¹, RG Oliveira¹, PS Rossignolli², CR Pedroni², FCB Alves¹, L Sobrevia^{3,4,5}, AMP Barbosa^{1,2}, MVC Rudge¹, IMP Calderon¹, The Diamater Study Group¹

(1) São Paulo State University (UNESP), Department of Gynecology and Obstetrics, Botucatu Medical School (FMB), CEP18618-687, Sao Paulo State, Botucatu, Brazil.

(2) São Paulo State University (UNESP), Department of Physiotherapy and Occupational Therapy, School of Philosophy and Sciences, CEP 17.525-900, São Paulo State, Marília, Brazil.