

European Journal of Clinical Investigation

52nd Annual Scientific Meeting of the
European Society for Clinical Investigation



Barcelona, Spain
30th May – 1st June 2018

ABSTRACT BOOK

Volume 48

Supplement 1

May 2018

Abstracts of the 52nd Annual Scientific Meeting of the European Society for Clinical Investigation

"Precision medicine for healthy ageing"

Barcelona, Spain

30th May – 1st June 2018

Guest Editor:

Prof. Lina Badimon

Prof. Gema Frühbeck

These abstracts have been published as they were received via online electronic submission. Every effort has been made to reproduce faithfully the abstracts as submitted. However, no responsibility is assumed by the organizers for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of methods, products, instructions or ideas contained in the materials herein. Because of the rapid advances in medical sciences, we recommend that independent verification of diagnoses and drug doses should be made.

Contents

Abstract number

PL | Plenary speakers

PL-1-PL-5

Workshop invited speakers

W1 | Phagocyte biology
W2 | Mitochondria, ageing and disease
W2/W4 | Mitochondria, ageing and disease & Hepato-Gastroenterology/Lipids
W3 | Cardiology-CIBERCV
W4/W7 | Hepato-Gastroenterology/Lipids & Obesity-CIBEROBN
W5/W7 | Omics & Obesity-CIBEROBN
W6 | Precision nutrition
W7 | Obesity-CIBEROBN

W1-L1-W1-L19
W2-L1-W2-L18
W2/W4-L1-W2/W4-L4
W3-L1-W3-L18
W4/W7-L1-W4/W7-L7
W5/W7-L1-W5/W7-L14
W6-L1-W6-L9
W7-L1-W7-L4

Oral presentations

W1 | Phagocyte biology
W2 | Mitochondria, ageing and disease
W3 | Cardiology-CIBERCV
W4/W7 | Hepato-Gastroenterology/Lipids & Obesity-CIBEROBN
W7 | Obesity-CIBEROBN

W1-O1-W1-O15
W2-O1-W2-O10
W3-O1-W3-O14
W4/W7-O1-W4/W7-O10
W7-O1-W7-O4

Posters by theme

W1 | Phagocyte biology
W1 | Phagocyte biology
W2 | Mitochondria, ageing and disease
W2 | Mitochondria, ageing and disease
W2 | Mitochondria, ageing and disease
W3 | Cardiology-CIBERCV
W3 | Cardiology-CIBERCV
W3 | Cardiology-CIBERCV
W4 | Hepato-Gastroenterology/Lipids
W5 | Omics
W6 | Precision nutrition
W7 | Obesity-CIBEROBN
W7 | Obesity-CIBEROBN
W9 | Miscellaneous Medical Topics

Poster session 1
Poster session 2
Poster session 1
Poster session 2
Poster session 3
Poster session 1
Poster session 2
Poster session 3
Poster session 3
Poster session 2
Poster session 3
Poster session 1
Poster session 3
Poster session 3

P1-T-P20-T
P21-T-P35-T
P36-T-P55-T
P56-T-P72-T
P1-F-P34-F
P73-T-P102-T
P103-T-P128-T
P35-F-P68-F
P69-F-P90-F
P129-T-P161-T
P91-F-P99-F
P162-T-P191-T
P100-F-P125-F
P126-F-P142-F

Posters by session

W1 | Phagocyte biology
W2 | Mitochondria, ageing and disease
W3 | Cardiology-CIBERCV
W7 | Obesity-CIBEROBN
W1 | Phagocyte biology
W2 | Mitochondria, ageing and disease
W3 | Cardiology-CIBERCV
W5 | Omics
W2 | Mitochondria, ageing and disease
W3 | Cardiology-CIBERCV
W4 | Hepato-Gastroenterology/Lipids
W6 | Precision nutrition
W7 | Obesity-CIBEROBN
W9 | Miscellaneous Medical Topics

Poster session 1
Poster session 1
Poster session 1
Poster session 1
Poster session 2
Poster session 2
Poster session 2
Poster session 2
Poster session 3
Poster session 3
Poster session 3
Poster session 3
Poster session 3
Poster session 3

P1-T-P20-T
P36-T-P55-T
P73-T-P102-T
P162-T-P191-T
P21-T-P35-T
P56-T-P72-T
P103-T-P128-T
P129-T-P161-T
P1-F-P34-F
P35-F-P68-F
P69-F-P90-F
P91-F-P99-F
P100-F-P125-F
P126-F-P142-F

Poster session 1 Thursday, 31 May, 12:30-14:30

Poster session 2 Thursday, 31 May, 17:30-19:00

Poster session 3 Friday, 1 June, 12:30-14:30

of ZD7288 (an organic blocker) stimulated electrically and also in the absence of this stimulation.

The experiments, which involved the intracellular recording of electrical activities in the working myocardium, were carried out on random-bred albino rats. Isolated right atrial wall from a fragment of the right auricle exhibiting no pacemaker activity was placed in a 3-mL chamber and superfused with Tyrode solution at 38°C at a rate of 10 mL/min. The stimulus duration (1 ms) and repetition rate (5 Hz) corresponded to the normal HR of mature rats. Intracellular AP was recorded via glass microelectrodes with resistance of 25–60 MΩ. The signals were digitized with an E14-140 converter (L-Card) and recorded using PowerGraph 3.3 software (DiSoft). The data were processed with Mini-Analysis 3.0.1 software (Synaptosoft), Microsoft Excel software and Student's *t* test.

ZD7288 significantly increased the duration of action potentials at 50% and 90% repolarization levels in atrial myocardium at a fixed stimulation rate of 5 Hz. The blocker affected neither resting potential nor the upstroke velocity of action potential.

Work supported by Program of Competitive Growth of KFU and Russian Foundation for Basic Research (grant No. 17-04-00071).

P124-T | The blockade of If in isolated (Langendorff perfused) heart

T.L. Zefirov*; A.M. Kuptsova*; T.P. Zefirova†;
L.I. Faskhutdinov*; N.I. Ziyatdinova*

*Kazan (volga Region) Federal University, Kazan, Russian Federation;

†Kazan State Medical Academy – Branch Campus of the FSBEI FPE
RMACEP Russia, Kazan, Russian Federation

According to modern views, If are responsible for the development of initial, linear, and slow diastolic depolarization in cells of the sinoatrial node. At the same time, a rather small If was identified in both atypical and working cardiomyocytes. Therefore, it remains unclear how the blockade of data currents affects heart function.

This research aim is to investigate dose-dependent effects of the blockade of If: on coronary flow; the inotropy; and the chronotropy in Langendorff perfused heart in adult rats. Isolated hearts were perfused in a Krebs-Henseleit solution – Langendorff (ADInstruments) installation. The coronary flow (CF), systolic pressure in the left ventricle (LVP) and heart rate (HR) were calculated along the curve. The signals were recorded in a PowerLab system (ADInstruments) with the help of LabChart Pro 8.0 software. 10^{-9} – 3×10^{-5} M concentrations range of ZD7288 (Sigma) were used for the blockade of If. The data was processed

statistically using Microsoft Excel software and Student's *t* test.

ZD7288 10^{-9} M increased LVP by 47% ($P \leq 0.05$), decreased HR by 26% ($P \leq 0.05$) and reduced CF by 20% ($P \leq 0.01$). ZD7288 10^{-8} M, 10^{-7} M and 10^{-5} M did not cause significant alterations in the studied parameters of the heart. ZD7288 10^{-6} M led to bradycardia – 23% ($P \leq 0.05$) and did not cause significant changes in LVP and CF. ZD7288 3×10^{-6} M reduced LVP by 14% ($P \leq 0.05$), HR by 11% ($P \leq 0.05$) and did not lead to a change in CF. If blockade 3×10^{-5} M reduced myocardial inotropy by 26% ($P \leq 0.05$), CF by 14% ($P \leq 0.01$) and HR by 19% ($P \leq 0.05$).

The blockade of If in Langendorff perfused hearts of adult rats resulted in different contractility effects. The range in all the studied concentrations of the If blockade reduced both heart function and coronary flow.

Work supported by Program of Competitive Growth of KFU and Russian Foundation for Basic Research (grant No. 17-04-00071).

P125-T | Role of NPY1,5-receptors in the neonatal rats myocardial contractility

T. Zefirov*; A.A. Zverev*; N. Iskakov*; P.M. Masliukov†;
T.A. Anikina*

*Kazan (volga Region) Federal University, Kazan, Russian Federation;

†Yaroslavl State Medical University, Yaroslavl, Russian Federation

Neuropeptide Y (NPY) is present in the central and peripheral nervous systems and fully satisfies to neurotransmitter criteria, since it is stored in sympathetic vesicles, released by electrical stimulation and acts on specific receptors. In the rat heart there are metabotropic Y1R, Y2R, Y3R, Y4R and Y5R receptors. The density of different receptor subtypes varies in postnatal ontogenesis. Expression of Y1R increased between 10 and 20 days of life. A small number of Y2R is observed in the atria and ventricles only from 20 days of life. In contrast, the highest level of expression of Y5R was found in newborn pups comparing with more adult rats.

The aim of the current study was to determine the role of different subtypes of NPY receptors in the heart contraction in the postnatal development. Registration of isometric contraction of atrial and ventricular myocardial striae of 7- and 100-day-old rats was carried out on a PowerLab device with a force sensor MLT 050/D (ADInstruments).

The selective agonist of Y1R, Leu(31)Pro(34)NPY (10^{-5} – 10^{-13} M), induced an increase in myocardial contraction force in 7-day-old (10^{-6} M) and in 100-day-old rats (10^{-7} M). The selective blocker of Y1R, BIBP 3226,