

Triphosphoric Acid, Donated, Restores Heart Rhythm Disturbances Caused by Energetically Deficient, Mitochondrial Hypercalcaemia to Ca⁺⁺ Mpt Pore Lesion

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ABSTRACT

Ca⁺⁺ mPT pore damage leads to ↑ Ca⁺⁺ in the mitochondria (M), where Ca⁺⁺ pumps ↓H⁺ and ↑pH, through the disordered depolarization ↓electric potential of the internal M membrane, ATP synthesis is also affect, which is manifested by a mitochondrial energy deficit (MED). MED provoke → cell hypo - anergy → oxidative stress, OS → collapse M → M swells → osmotic demyelination → membrane rupture M → detritus mass output with large molecule in intermembrane space M → in cell cytosol → apoptosis-inducing factor → cytochrome C → which are the predictors of programmed cell death. Contributing to the increase in blood pressure to OS not only hyperadrenalinemia, but also the reduction of the effect of vasorelaxation by NO, which ↓ as it becomes becomes a trap for the excess oxygen free radicals, especially for oxygen superoxide. Triphosphoric acid (ATP), donated, as an energetic carrier, mitochondrial permeability transition pore-dependent Ca⁺⁺ uniporter, mPT pore, restores the disorder of electrical cardiac potentials: ↓Conductivity, ↑refractoriness of the atrioventricular node, ↓sinus nodule automatism, and primary hypertension, caused by MED and, further, manifested by the microcirculatory and mitochondrial distress syndrome. Simultaneously, ATP influences: Mitochondrial ATP-dependent potassium channel, mitoKATP; acetylcholine-dependent potassium channel, KACH cholinergic-M receptor; receptors: Adenosine A1; and purine P2. M myocardial cells create mesh nets that limit the disordered energy flow in the reduced M space, avoiding damage to the entire heart muscle. As a result, M also plays the role of the electroconductivity switch, which protects the heart from the extent of the damage of a "short circuit" in area necrotizing myocardiocytes and M hypoanergic. Hence, the anti-arrhythmogenic effect of ATP-energetic

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carrier is possible for restoring heart rate, replacing the DEM caused by $\uparrow\text{Ca}^{++}$ intra M due to Ca^{++} mPT lesion pore; affects Mito KATP of the antagonist with Ca^{++} mPT pore by $\uparrow\text{K}^{+}$ and $\downarrow\text{Ca}^{++}$; balances the ChitoATP-/MitoATP-dependent channels; and activates the KACH cholinergic - M receptor channels; receptors; adenosine A1 purine P2, and the forskolin ferment.

Key words: Triphosphoric acid, mitochondrial permeability transition pore-dependent Ca^{++} uniporter, mPT pore, mitochondrial ATP-dependent potassium channel, mitoKATP, acetylcholine-dependent potassium channel, KACH cholinergic-M receptor, receptors: adenosine A1; purine P2

REFERENCES

1. Vasiliev I, Maria V, Irina V, Litarczek G, Friptu V, Gladun S, et al. Suspending Microcirculatory-Mitochondrial Distress Syndrom by recruiting Microcirculatory-Mitochondrial Disorders of Obstetric Critical Situations. Scientific Coordinator. Professor Dr. Onofriescu. Abstract. Iasi, Romania: National Congressional Society of Obstetric and Gynecological Society of Romania. Sum of Summaries; 2018. p. 167.
2. Vasiliev I, Maria V, Irina V, Litarczek G, Friptu V, Gladun S, et al. Suspending Microcirculatory-Mitochondrial Distress Syndrom by Recruiting Microcirculatory-Mitochondrial Disorders of Obstetric Critical Situations. Scientific Coordinator. Professor Dr. Onofriescu. E-Poster. Iasi, Romania: National Congressional Society of Obstetric and Gynecological Society of Romania. Sum of Summaries; 2018. p. 41.
3. Vasiliev I, Maria V, Irina V, Litarczek G, Friptu V, Gladun S, et al. De-installation of the MODS by associating the microcirculatory mitochondrial recruitment with MOST in ELSO. Perinatol Bull J Res Pract 2018;3:6. Abstract. Chişinău: National Congress of Obstetrics and Gynecology with International Participation; 2018.
4. Diug V, Vasiliev I. Definitive Haemostasis in Hematoma Postpartum Massive Hemorrhage. Sum of Summaries. Iasi: National Conference; 2018. p. 44.
5. Vasilieva M. The role of Modified Consciousness in the Possibility of Neuro-Stimulation Treatment in Chronic Pain. Romanian: USMF Nicolae Testemitanu, Republic of Moldova, Days of the State University of Medicine and Pharmacy Nicolae Testemitanu; 2018. p. 47.
6. Vasilieva M. Biochemical Quality Changes in Tears. Vinnitsa (Ukraine): XIY Materials at the International Student Conference; 2017. p. 208.
7. Vasiliev I, Vasilieva M, Vasilieva I, Catereniuc I, Globa T, Nacu V, Globa P. Aggressiveness syndrome hyperantiinflammatory immune CHAOS dissonance and extracorporeal myelotimospleen perfusia. Tolyatti Med Counc 2016;3:64-7.
8. Vasiliev I, Maria V, Irina V. The Medico Legal Indications and Contraindications to the use ECMO and ECCO2R at ALI/RARDS. United States: Project Proposed for Discussion and Study WAMS; 2016.
9. Vasiliev I, Vasilieva M, Vasilieva I, Catereniuc I, Nacu V, Globa T. The Extracorporeal bio-xeno perfuzion (myelotimo-spleen) in multi-organ suportive therapy (MOST) as a modulator of energy, for immuno corection compensatory anti-inflammatory respons syndromes, and persistent inflammation, imunno supression, catabolism, and multi organ dysfunction. J Anesth Patient Care 2015;1:104.
10. Ghicavai V, Bacinschi N, Guşila G. Farmacologie. Chişinău: Tipografia Centrală; 2012. p. 190-240.
11. Vasiliev I. Respiratory Support with Alveolar Recruitment for Complex Treatment of Acute Lung Injury and Acute Respiratory Distress Syndrome. Book of Abstracts III International Congress for Respiratory Support Krasnoyarsk; 2009. p. 2-7.
12. Vasiliev I, Calalb I, Bujujan A, Cacian M. Successful Treatment of Disseminated Intravascular Coagulation Syndrome in Obstetrics. Collection of Papers and Theses. Actual Problems Anaesthesiology and Intensive Therapy. 2nd White Sea Symposium. Arkhangelsk; 2007. p. 106-8.
13. Vasiliev I, Malachi M, Niculita I. The extracorporeal bio-xeno perfusion (timo-spleen) for the complex treatment of systemic lupusery thematosus. Courr Med 1996;2:41-3.
14. Vasiliev I, Solodkin S, Nistor V. The extracorporeal bio-xeno perfusion as a complex therapeutic component of the treatment of septicemia on the background of associated injury. Courr Med 1993;2:56.
15. Vasiliev I, Ceban N. The lymphotropic therapy with lymph stimulation in complex treatment of exotoxin shock. Health Care 1989;2:53-4.
16. Vasiliev I, Creciun A. Cases of anaphylactic shock and tactics emergency therapy. Health Care 1986;5:51-3.

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In the photo, Irina, Maria, I, and other scientists from all over the world on Global Summit on Medicine, Pharmacology & Cancer Research with WAMS Barcelona (Spain) 2018 where we are giving a presentation in Barcelona (Spain) of the absence of maternal mortality in terminal obstetric situations during the 35-year emergency service.

Professional Biography you can find in profile Ilie Vasiliev LinkedIn whose transparency is available to everyone.

This scientific material has been cumulated over 35 years retrospectively in the Republic of Moldova, the Russian Federation, Middle Asia, as well as from all over the world.