

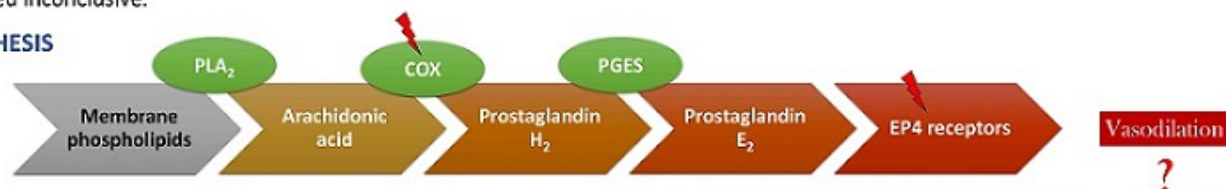
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CONCEPTUAL BACKGROUND

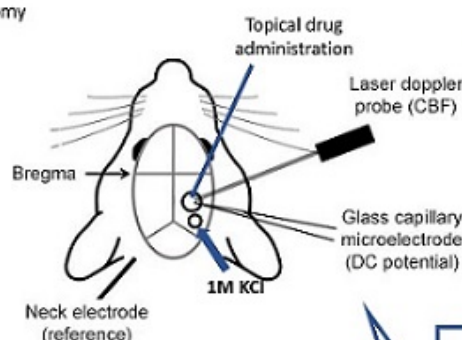
Recurrent spreading depolarization (SD) is a slowly propagating wave of massive cellular depolarization in the cerebral gray matter that occurs spontaneously in the ischemic brain. SD is occasionally associated with atypical hemodynamic response, which is thought to contribute to the expansion of the ischemic core by decreasing cerebral blood flow (CBF) and increasing the energy demand of the cells. The significance of prostanoid signaling in neurovascular coupling during somatosensory stimulation is increasingly more appreciated, yet its involvement in mediating the CBF response to SD has remained inconclusive.

HYPOTHESIS

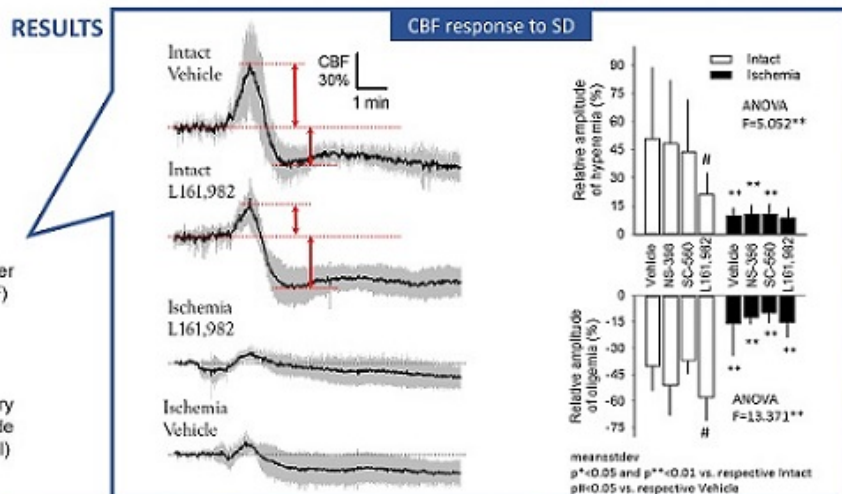


EXPERIMENTAL APPROACH

- Animals: male Sprague-Dawley rats (25-30g) (n=60)
- Anesthesia: isoflurane (1.5-2% in N₂O:O₂/2:1)
- Monitoring: MABP and arterial blood gases
- Small, open craniotomy

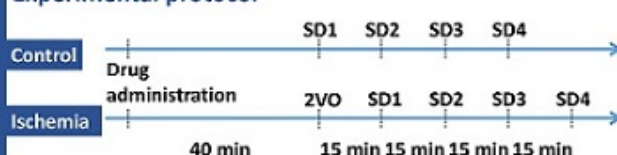


RESULTS



Experimental group	Pharmacological treatment	Ischemia induction (SHAM or 2VO)	n
1	Vehicle	SHAM	8
2	(1.5% DMSO in aCSF)	2VO	7
3	100 μ M NS-398 (COX-2 inhibition)	SHAM	7
4		2VO	6
5	25 μ M SC-560 (COX-1 inhibition)	SHAM	7
6		2VO	7
7	1 μ M L161,982 (EP4 receptor antagonism)	SHAM	6
8		2VO	12

Experimental protocol



ACKNOWLEDGEMENTS

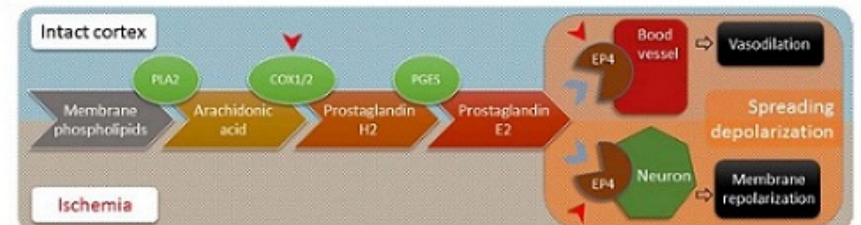
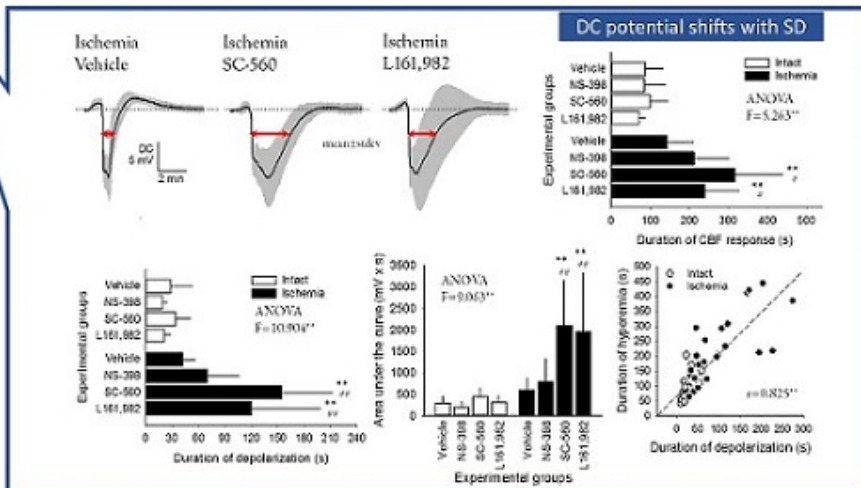
This work was supported by grants from the Hungarian Scientific Research Fund (Grant No. K111923); the Hungarian Brain Research Program (Grant No. KTIA_13_NAP-A-1/13); TÁMOP-4.2.2.D-15/1/KONV-20150024; the Faculty of Medicine, University of Szeged, Hungary; and the Bolyai János Research Scholarship of the Hungarian Academy of Sciences (BO/00327/14/5, to EF)



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SIGNIFICANCE OF THE RESULTS

The restriction of SD evolution in neurological intensive care patients has become a central objective. So far, the inhibition of NMDA receptors by ketamine administration has been the only strategy of promise to decrease the likelihood of SD occurrence. Our data suggest, that activation of EP4 receptors initiates vasodilation in response to SD in the intact brain. In addition, COX-1 derived prostanoids – together with the activation of EP4 receptors – shortens SD duration in the acute phase of ischemia. These observations may initiate a new line of investigation to dissect specific components of prostanoid signaling that may play a defining role in sustaining or aborting SD in the ischemic nervous tissue.



P50 THE EFFECT OF PRIMARY SENSORY NEURON DESENSITIZATION ON EXPERIMENTAL ACUTE PANCREATITIS MODELS

Réka Bálint E¹, Balla Z², Kiss L², Molnár A¹, Marsollier C³, Marc R⁴, Venglovecz V⁵, Maléth J¹, Hegyi P^{1,6,8}, Helyes Z⁷, Rakonczay Jr. Z²

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P51 THE DIHYDROPYRIDINE DERIVATIVE LA1011 DOES NOT ALTER NEUROVASCULAR COUPLING IN THE RAT CEREBRAL CORTEX

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P52 IS THERE ANYTHING NEW UNDER THE SUN? COMPARED EFFICACY OF PRESERVATION SOLUTIONS ON THE OUTCOME OF LIVER TRANSPLANTATION: A META-ANALYSIS

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P53 MITOCHONDRIAL FUNCTION AND DISTRIBUTION IN PANCREATIC DUCTAL EPITHELIAL CELLS

Tóth E¹, Maléth J¹, Erdős R¹, Rázga Zs², Tretter L³, Horváth G³, Rakonczay Z Jr.^{1,4}, Hegyi P^{5,6}

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P54 CONTRIBUTION OF PROSTANOID SIGNALING TO THE EVOLUTION OF SPREADING DEPOLARIZATION AND THE ASSOCIATED CEREBRAL BLOOD FLOW RESPONSE

Varga DP¹, Menyhárt A¹, Puskás T¹, Hertelendy P¹, Tóth R¹, Bari F¹, Farkas E¹

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P55 IBOGAINE AFFECTS THE REDOX STATUS IN RAT ILEUM

Vidonja Uzelac T¹, Tatalovic N¹, Mijuskovic A¹, Orescanin Dusic Z¹, Nikolic Kokic A¹, Spasic M¹, Paskulin R^{2,3}, Bresjanac M³, Blagojevic D¹

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P56 SMOOTH MUSCLE RELAXANT EFFECTS OF THE FENNEL FRUITS ESSENTIAL OIL ON SPONTANEOUS AND SPASMOGEN-INDUCED CONTRACTIONS OF THE ISOLATED RAT ILEUM

Brankovic S¹, Gocmanac Ignjatovic M¹, Radenkovic M¹, Kostic M², Kitic N³, Miladinovic B², Kitic D²

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P57 MORPHOMETRIC ANALYSIS OF CO-SUPPLEMENTATION WITH VITAMINS C AND E ON STRUCTURAL RENAL CHANGES INDUCED BY GENTAMICIN IN RATS

Stojiljkovic N¹, Ilic S¹, Veljkovic M¹, Randjelovic P¹, Radovanovic D², Todorovic J³, Stojanovic N³

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P58 PIOGLITAZONE ATTENUATES RENAL INJURY IN AN EXPERIMENTAL MODEL OF GENTAMICIN-INDUCED NEPHROTOXICITY IN RATS

Medic B¹, Stojanovic M¹, Savic Vujovic K¹, Skodric Radivojevic S², Basta Jovanovic G², Radenkovic M¹, Prostran M¹

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