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ABSTRACT BOOK

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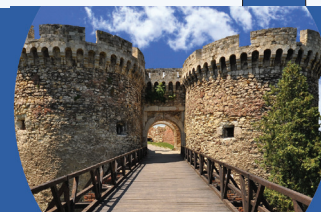
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Thursday, July 11, 2019

13:45-15:00

Room Atlantic 1
Room Atlantic 2

POSTER SESSION 1

P065

RELATIONSHIP BETWEEN REGIONAL DISTRIBUTIONS OF CYTOCHROME C OXIDASE AND COPPER-DELIVERING CHAPERONES IN SCLEROTIC HIPPOCAMPI OF EPILEPSY PATIENTS

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Aims: A drop in copper level and the loss of energy homeostasis are both portrayed in mesial temporal lobe epilepsy (mTLE) with hippocampal sclerosis (HS) patients. Cytochrome c oxidase (COX) represents a crossroad of energy and copper metabolism; it is a key component of mitochondrial machinery and contains two copper centers. Our aim here was to examine the link between COX activity and the copper transporting system in HS. COX activity and the levels of mRNA of selected chaperones - COX11, COX17, Sco1 and Sco2 were determined in 13 anatomically distinct hippocampal regions.

Methods: Study was performed on seven hippocampal samples, four of which had been acquired during the course of amygdalohippocampectomy treatment of medically intractable epilepsy and three control postmortem samples. Adjacent slices were used for Nissl staining, COX activity assay and mRNA in situ hybridization with autoradiography. Densitometry was performed using ImageJ.

Results: Overall COX activity was decreased in HS compared to controls ($P = 0.0003$). However, 5 regions showed significantly lower COX activity in HS and 8 did not. Subiculum showed slightly higher activity in HS. The levels of mRNA levels were lowered in HS in 6 regions for COX11, 10 regions for COX17, two regions for Sco1 and 11 regions for Sco2.

Conclusions: Our findings suggest the loss of energy homeostasis in HS may be related to pathological changes in specific components of copper delivery to COX, and that the impact may vary between different hippocampal regions.

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