How does ischemic stroke affect Oligodendrocytes (OLG) and Oligodendrocyte Progenitor Cells (OPC): an analysis

Jorge Mario Gaspar Toro MD
Graduate Student MSc in Physiology
Universidad Nacional de Colombia
IBRO VLTP Course 2019
BACKGROUND

• Stroke is the second cause of death and disability in the world

• 84% of Stroke is Ischemic and important weight for health systems

• Most studies focused on the effect of stroke on nerve cells

• The aim is to collect and review studies that were aimed at elucidating the effect of ischemic stroke on OLG and OPC
HOW

- "Oligodendrocyte Precursor Cells" OR Oligodendroglia OR "Extracellular Vesicles" OR (NG2 AND (neuroglia OR glia)) OR exovesicles OR exosomes

- **AND** "Brain Ischemia" OR Stroke OR "ischemic stroke" OR "cerebrovascular accident"
HOW

- **NOT** retina OR prenatal OR perinatal OR "spinal cord" OR diabetes OR "myocardial infarction" OR hypertension OR fetal OR neonatal OR alzheimer OR dementia OR "multiple sclerosis" OR premature OR cancer OR tumour OR astrocytes OR microglia
386 Non-Duplicate Citations Screened with Mendeley

Inclusion/Exclusion Criteria Applied
- 296 Articles Excluded After Title/Abstract Screen
- 90 Articles Retrieved

Inclusion/Exclusion Criteria Applied
- 14 Articles Included
- 58 Articles Excluded After Full Text Screen
- 18 Articles Excluded During Data Extraction
FINDINGS

• Unilateral MCAO middle cerebral artery occlusion with filament or suture

• Mean of time 60-90 minutes

• Included zones: cortex, striatum, corpus callosum, external capsule
FINDINGS
FINDINGS

The bar chart shows the number of articles contributed by different countries, with the USA leading significantly. The chart also indicates the prevalent animals used in research, with Sprague-Dawley Rats being the most common, followed by C57BL/6 Mice and Spontaneously Hypertensive Rats.
Peri-Infarct

Ischemia

+ Migration

OPC

+ pCREB

VC

+ MBP

VC
CONCLUSIONS

• The OLG and OPC are an component of the triad neuron-glia-vascular cells in cerebral ischemia

• Is important to continue the research about the links between OLG-OPC and other cells in ischemic stroke

• Is necessary to continue the integration of evidence to give a comprehensive explanation
THANKS
jmgaspart@gmail.com

For more information scan me!
References


