Pathophysiology and Risk of Atrial Fibrillation Detected after Ischemic Stroke (PARADISE): A Translational, Integrated, and Transdisciplinary Approach

Paquet M.

Cerasuolo J.O.

Thorburn V.

Fridman S.

Alsubaie R.

Lopes R.D.

Cipriano L.E.

Salamone P.

Melling C.W.J.

Khan A.R.

Sedeño L.

Fang J.

Drangova M.

Montero-Odasso M.

Mandzia J.

Khaw A.V.

Racosta J.M.

Paturel J.

Samoilov L.

Stirling D.

Balint B.

Jaremek V.

Koschinsky M.L.

Boffa M.B.

Summers K.

Ibañez A.

Mrkobrada M.

Saposnik G.

Kimpinski K.

Whitehead S.N.

Sposato L.A.

Background: It has been hypothesized that ischemic stroke can cause atrial fibrillation. By elucidating the mechanisms of neurogenically mediated paroxysmal atrial fibrillation, novel therapeutic strategies could be developed to prevent atrial fibrillation occurrence and perpetuation after stroke. This could result in fewer recurrent strokes and deaths, a reduction or delay in dementia onset, and in the lessening of the functional, structural, and metabolic consequences of atrial fibrillation on the heart. Methods: The Pathophysiology and Risk of Atrial Fibrillation Detected after Ischemic Stroke (PARADISE) study is an investigator-driven, translational, integrated, and transdisciplinary initiative. It comprises 3 complementary research streams that focus on atrial fibrillation detected after stroke: experimental, clinical, and epidemiological. The experimental stream will assess pre- and poststroke electrocardiographic, autonomic, anatomic (brain and heart pathology), and inflammatory trajectories in an animal model of selective insular cortex ischemic stroke. The clinical stream will prospectively investigate autonomic, inflammatory, and neurocognitive changes among patients diagnosed with atrial fibrillation detected after stroke by employing comprehensive and validated instruments. The epidemiological stream will focus on the demographics, clinical characteristics, and outcomes of atrial fibrillation detected after stroke at the population level by means of the Ontario Stroke Registry, a prospective clinical database that comprises over 23,000 patients with ischemic stroke. Conclusions: PARADISE is a translational research initiative comprising experimental, clinical, and epidemiological research aimed at characterizing clinical features, the pathophysiology, and outcomes of neurogenic atrial fibrillation

detected after stroke. © 2018 National Stroke Association

atrial fibrillation

Ischemic stroke

outcome

pathophysiology

prognosis

recurrence

C reactive protein

interleukin 1beta

interleukin 6

tumor necrosis factor

animal experiment

animal model

Article

atrial fibrillation

autonomic dysfunction

autonomic nervous system function

brain damage

brain ischemia

controlled study

echocardiography

electrocardiography

heart atrium flutter

heart left ventricle ejection fraction

heart rate

human

insula

interdisciplinary research

major clinical study

male

National Institutes of Health Stroke Scale

neuroanatomy

neutrophil lymphocyte ratio

nonhuman

nuclear magnetic resonance imaging

pathophysiology

priority journal

rat

recurrent disease

translational research

ambulatory electrocardiography

animal

atrial fibrillation

brain ischemia

cerebrovascular accident

cooperation

disability

disease model

factual database

female

interdisciplinary communication

methodology

Ontario

procedures

prognosis

prospective study

register

retrospective study

risk factor

Animals

Atrial Fibrillation

Brain Ischemia

Cooperative Behavior

Databases, Factual

Disability Evaluation

Disease Models, Animal

Electrocardiography, Ambulatory

Female

Humans

Interdisciplinary Communication

Male

Ontario

Prognosis

Prospective Studies

Registries

Research Design

Retrospective Studies

Risk Factors

Stroke

Translational Medical Research