Prevalence and Outcome of Alteplase in Posterior Cerebrovascular Stroke Versus Anterior Cerebrovascular Stroke

Thesis

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List of Abbreviations

Abb.	Full term
ACA	Anterior Cerebral Artery
ACEI	Angiotensin Converting Enzyme Inhibitor
ACOM	Anterior Communicating Artery
ACS	Anterior circulation Stroke
AF	Atrial Fibrillation
AHA/ASA	American Heart Association/ American Stroke Association
AICA	Anterior Inferior cerebellar Artery
AIS	Acute Ischemic Stroke
AMPA	Alpha-amino-3-hydroxy-5-methyl-4-isoxanole propionate
aPTT	activated Partial Thromboplastin Time
ATLANTIS	Alteplase Thrombolysis for Acute Noninterventional Therapy in Ischemic Stroke
AVM	Arterio-Venous Malformation
BA	Basilar Artery
BMI	Body Mass Index
CADASIL	Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy
CBF	Cerebral Blood Flow
CCA	Common Carotid Artery
CHADS2	Congestive heart failure, Hypertension, Age ≥75 years, Diabetes mellitus, Stroke [double weight])
CHF	Congestive Heart Failure
CPP	Cerebral Perfusion Pressure
CPSS	Cincinnati Prehospital Stroke Scale
CTA	Computed Tomography Angiography
CVS	Cerebrovascular Stroke

List of Abbreviations Cont...

Abb.	Full term
DALY	Disability Adjusted Life Year
DTN	Door-To-Needle
DWI	Diffusion Weighted Image
ECA	External Carotid Artery
ECASS	European Cooperative Acute Stroke Study
ECG	Electrocardiogram
EMS	Emergency Medical Services
EPITHET	Echoplanar Imaging Thrombolytic Evaluation Trial
ESC	European Society of Cardiology
ESH	European Society of Hypertension
FAST	Face-Arm-Speech-Test
GBD	Global Burden Disease
HDL	High Density Lipoprotein
HMG-CoA	3-hydroxy-3-methyl-glutaryl-CoA
HS	Hemorrhagic Stroke
HTN	Hypertension
ICA	Internal Carotid Artery
ICH	Intracranial hemorrhage
IHD	Ischemic Heart Disease
INR	International Normalized Ratio
IQR	Interquartile range
IS	Ischemic Stroke
IVT	Intravenous Thrombolysis
LAPSS	Los Angeles Prehospital Stroke Screen
LDL	Low Density Lipoprotein
LMWHs	Low-Molecular-Weight Heparin
MASS	Melbourne Ambulance Stroke Screen
MCA	Middle Cerebral Artery

List of Abbreviations Cont...

Abb.	Full term
MI	Myocardial Infarction
ML	Medial Lemniscus
MRA	Magnetic Resonance Angiography
MRI	Magnetic Resonance Imaging
MRS	Modified Rankin Scale
NCHCT	Non-Contrast Head Computed Tomography
NHANES	National Health and Nutrition Examination Survey
NIHSS	National Institute of Health Stroke Scale
NINDS	National Institute of Neurological Disorders and Stroke
NMDA	N-methyl-D-aspartate
OA	Ophthalmic Artery
OCP	Oral Contraceptive Pills
OTD	Onset-To-Door
PCA	Posterior Cerebral Artery
PCOM	Posterior Communicating Artery
PCS	Posterior circulation stroke
PICA	Posterior Inferior Cerebellar Artery
PT	Prothrombin Time
r-tPA	recombinant tissue-type Plasminogen Activator
SCA	Superior Cerebellar Artery
SD	Standard Deviation
SITS	Safe Implementation of Treatment in Stroke
SPSS	Statistical Package for the Social Sciences
ST	Spinothalamic Tract
TIA	Transient Ischemic Attack
TOAST	Trial of ORG 10172 in Acute Stroke Treatment
TT	Thrombin Time
VA	Vertebral Artery

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INTRODUCTION

Intravenous thrombolysis (IVT) with alteplase is still the first-line therapy for all kinds of acute ischemic stroke (AIS) including both the anterior circulation stroke (ACS) and posterior circulation stroke (PCS) ***(Jauch et al., 2013).***

However, there are differences between both the PCS and ACS as regards the stroke etiology as large vessel being more common among ACS and small vessel being common among PCS also the outcome, where PCS is assumed to be worse with higher morbidity and mortality rates, reaching up to 54% after basilar artery occlusion ***(Schonewille et al., 2009).***

Despite that, it is suggested that PCS patients treated with IVT had a lower risk of developing hemorrhagic transformation within 7 days and had better chance of having no major disability at 90 days than ACS patients ***(Tong et al., 2016)***.

On the other hand, some stroke physicians do not care whether a patient had ACS or PCS at the clinical scene, and thereby PCS is often treated similarly to ACS, but results of anterior circulation trials do not necessarily apply to PCS as both have different clinical presentations with different severity on the widely used NIHSS scale and so the functional outcome of ACS couldn't be adequately generalized to PCS cases ***(Nouh et al., 2014).***

Since the studies were more concerned with ACS with limited studies concerned with PCS, mainly within the Middle East, so more comparative studies are needed to adequately assess the efficacy of IVT among the ACS and PCS patients. ***(Tissue Plasminogen Activator for Acute Ischemic Stroke; 1995; Mohamed et al., 2018; Elsayed et al., 2019).***

AIM OF THE WORK

The aim of the study is to compare the prevalence and outcome of intravenous thrombolysis in acute ischemic stroke in patients with posterior circulation stroke versus patients with anterior circulation stroke.

HYPOTHESIS

Hypothesis to be tested:

No difference in outcome of intravenous thrombolysis in posterior circulation ischemic stroke versus anterior circulation ischemic stroke.