

Patent foramen ovale (PFO) diagnosed by Transcranial Doppler method in young Thai stroke patients

Praveena Direkwattanachai, MD,
Sorawith Jearanaisilp, MD,
Sureerat Suwatcharangkoon, MD,
Disya Ratanakorn, MD,
Jesada Keandoungchun, MD
Division of Neurology,
Department of Medicine
Faculty of Medicine Ramathibodi Hospital,
Mahidol University, Bangkok, Thailand

Abstract

Background: One of the major causes of stroke in the young patient is undetermined etiology. Patent foramen ovale (PFO) has association in the cryptogenic stroke. Transcranial Doppler ultrasound (TCD), transthoracic echocardiogram (TTE) and trans-esophageal echocardiogram (TEE) are method to detect right to left shunt (RLS).

Objective: To study the Prevalence of PFO in young Thai stroke patients and the feasibility of TCD method for PFO diagnosis comparable to transthoracic echocardiography (TTE).

Methods: A descriptive retrospective analysis of Thai young ischemic stroke and transient ischemic attack (TIA) patients who were admitted in Ramathibodi hospital from 1 January 2013 to 31 December 2014. Baseline characteristics, risk factors, stroke subtypes according to TOAST classification (trial of ORG 1-172 in acute stroke treatment), ESUS (embolic stroke of undetermined source) criteria, investigating results; brain imaging, carotid duplex and transcranial Doppler ultrasound, additional agitated saline bubbles, and echocardiogram were recorded.

Results: Total number of transient ischemic attack (TIA) and ischemic stroke in young Thai patient in 2 years period was 67 cases. Only 19 patients (28.4%) were done the TCD-RLS agitated saline bubble test and 20 patients (29.8%) had done TTE/TEE agitated saline bubble test. Of 10 patients (17.9%) had done both TTE and TCD agitated saline bubble test. Only 1 patient (1.5%) had done all TTE, TEE and TCD agitated saline bubble test. Of 4 from 19 patients, who were done the RLS TCD detection, was positive (21.1%). Totally 7 from 32 patients (21.9%) who were performed in either TCD, TTE or TEE was positive.

Conclusions: The prevalence of PFO in young Thai stroke patients were 21.1% detecting by TCD and 25% by TTE/TEE with agitated saline bubble test. The feasibility of both TCD and TTE method for detecting PFO in young stroke patients was good with high specificity. (*J Thai Stroke Soc* 2015; 14 (3): 176.)

Keywords: patent foramen ovale, PFO, transcranial Doppler ultrasound, stroke