



**WRONG PATIENT – WRONG  
TEST ?**

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# Facts and figures

- Stroke is the third leading cause of mortality worldwide
- Approximately 700,000 strokes occur yearly of which the vast majority are ischaemic in nature (88%)
- No identifiable cause can be found in 40% of ischaemic strokes and are termed cryptogenic strokes
- Approx 10,000 people admitted to hospital in Ireland each year with stroke as the primary diagnosis

# Wrong patient – wrong test ?

- Cardiogenic source of thrombi accounts for 20-25% of all ischaemic strokes
- Echocardiography is the investigation of choice in the diagnosis of thrombi, but the type of and indications for echocardiography are controversial
- Transthoracic echocardiography vs transoesophageal echocardiography

# AIM :

- To investigate the yield of unselected echocardiography in stroke patients.

# What are we looking for..

- Source of embolus
- Occult structural heart disease
- Patent foramen ovale/shunt
- Cardiac tumour
- Left ventricular hypertrophy

## Method:

- We performed a retrospective study of echocardiogram reports in all patients diagnosed with stroke in Connolly hospital from January 2006 to December 2008.
- A total of 275 patients were diagnosed with stroke disease according to the hospital HIPE system

# Results :

- 173 (66.7%) inpatient echocardiograms.
- Echo's were ordered at the discretion of the attending physician
- Mean age – 70( $\pm$ 12) Range 23-94
- 58 (33.5%) patients  $\leq$  65
- 115 (66.4%) patients  $>$  65
- Echocardiograms were performed in more males (62.4%) than females (36.9%)

# Results:

- Abnormal echocardiograms in 93(53.7%) patients
- In patients with abnormal echocardiograms:
  - 74(79%) Positive medical history
  - 58(62%) Abnormal clinical findings
  - 67(72%) ECG changes
- ECG Changes:
  - 47 - Atrial fibrillation
  - 2 - Paced rhythm
  - 18 – ST changes

# Results:

- Normal echocardiograms in 80 (46.2%) patients
- In patients with normal echocardiograms:
  - 8(10%) Positive medical history
  - 7(8%) Abnormal clinical findings
  - 11(14%) ECG changes

# Results:

- In patients  $\leq 65$  years:
  - 58 echocardiograms performed
  - 19 (32%) Abnormal echocardiograms
  - 10(17.2%) Positive medical history
  - 11(18.9%) Abnormal clinical findings
  - 15(25.8%) ECG changes
  - 6(10.3%) Atrial fibrillation

# Results:

- 117(67.6%) patients with normal left ventricular function
- 41(23.6%) patients with moderately reduced left ventricular function
- 15(8.6%) with severely reduced left ventricular function
- 6 bubble studies - all negative
- 2 transoesophageal studies - negative

# Discussion:

- Systematic approach to echocardiography
- Specific guidelines for the young and older patients
- Young
  - Bubble study
  - Transoesophageal echocardiography
- Older
  - Change in clinical management
  - If evidence of structural cardiac disease on history, clinical examination or ECG

# Discussion:

- Transthoracic echocardiography should not be part of routine screen in stroke investigations
- Transoesophageal echocardiography and bubble studies are underutilized especially in the young
- Echocardiography requests should adhere to the European guidelines

# Conclusion:

- Non-systematic use of echocardiography in stroke is unhelpful

# Questions from me to you -

- How many of you have a protocol for echocardiography in stroke patients?
- How many of us here today have detected the source of embolus from a transthoracic echo, on stroke patients in THE ABSENCE OF AN ABNORMAL ECG?
- How many of us feel that we are making best use of our limited resources (and patient time) with current non systematic approach.
- How many of us put the elderly / stroke echo requests to the bottom of our ever growing lists.

A photograph of two women standing on a sandy beach. The woman on the left is wearing a blue one-piece swimsuit and a colorful floral swim cap. The woman on the right is wearing a black one-piece swimsuit with pink and yellow floral patterns and a pink swim cap. They are both smiling. In the background, there is a wooden boardwalk, the ocean with waves, and a clear sky. Two surfboards are visible: a long wooden one on the left and a colorful inflatable one on the right.

Thank you

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