

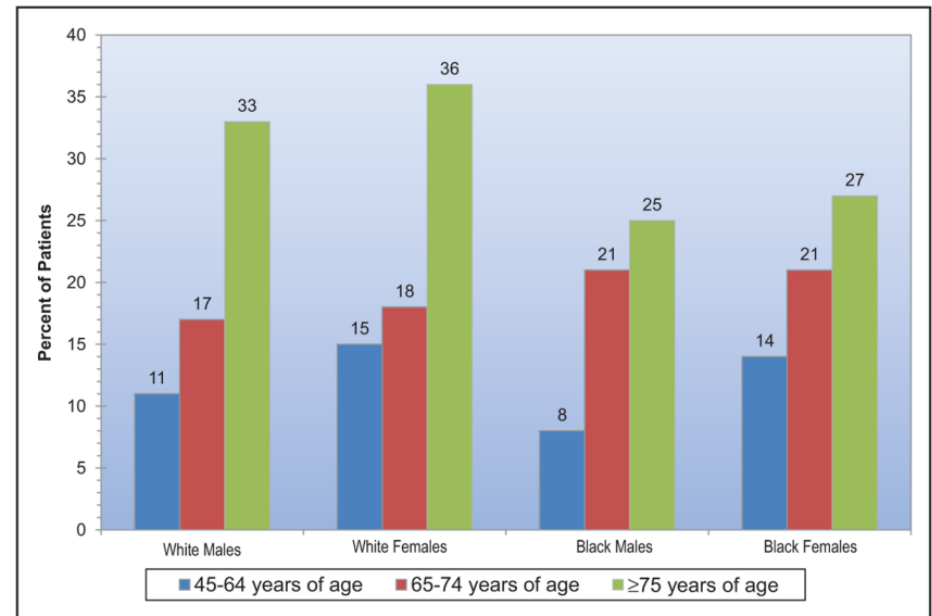


MIDTERM RESULTS OF CAROTID ENDATERECTOMY AT DONG NAI GENERAL HOSPITAL

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INTRODUCTION

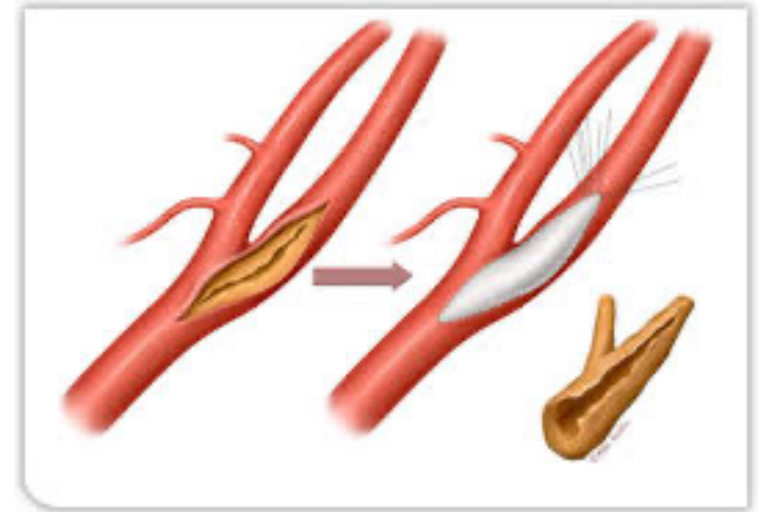
- Stroke: 5th leading cause of death
- Increased with age
- Create severe disability
- Burden for economy and society



1 year mortality of stroke

CAROTID ENDARTERECTOMY

- First operation: 1953
- Prevention of secondary stroke
- Proved to be very efficient
- Assessment of early and midterm results at DNGH





METHODS



- Retrospective case series
- Inclusion criteria: Pts underwent carotid endarterectomy at DNGH
- Exclusion criteria: Uncontactable patients
- Duration: 1/2017 – 10/2021



METHODS

- Surgical indications:
 - 2021 ESO guidelines
 - Severity of stenosis: NASCET (CT scan and echo)
- Surgical methods:
 - Conventional endarterectomy
 - Eversion technique
- Cerebral perfusion: INVOS
- Shunt:
 - Decreased INVOS > 20% after carotid clamping
 - Post-clamping internal carotid pressure < 40 mmHg



2-Channel Monitor





RESULTS



DEMOGRAPHICS



89 patients



12



77



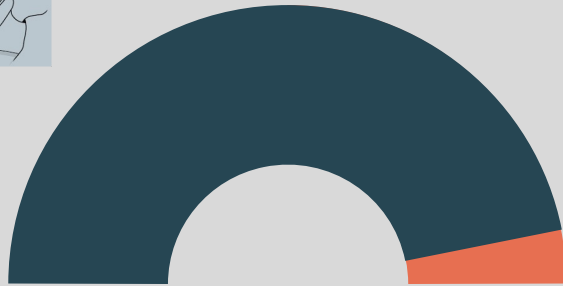
Average age: 65.2 ± 11.1
(54 – 89)

Characteristics	Number of pts
Smoking	79 (88.8%)
Hypertension	86 (96.6%)
Type II DM	25 (28.1%)
PAD	10 (11.2%)
CAD	40 (44.9%)

INTRAOPERATIVE CHARACTERISTICS



General
anesthesia
95.3%



Local
anesthesia
4.7%

INVOS

44.9%

**TEMPORARY
SHUNT**

17.9%

1

EVERSION

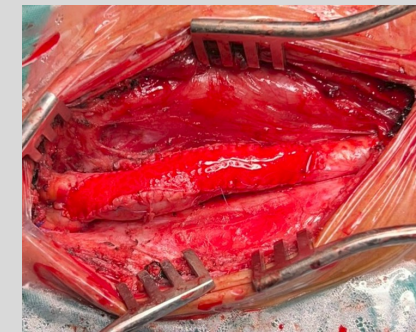
40.4%



2

CONVENTIONAL PATCH

59.6%



EARLY RESULTS



MAIN OUTCOMES



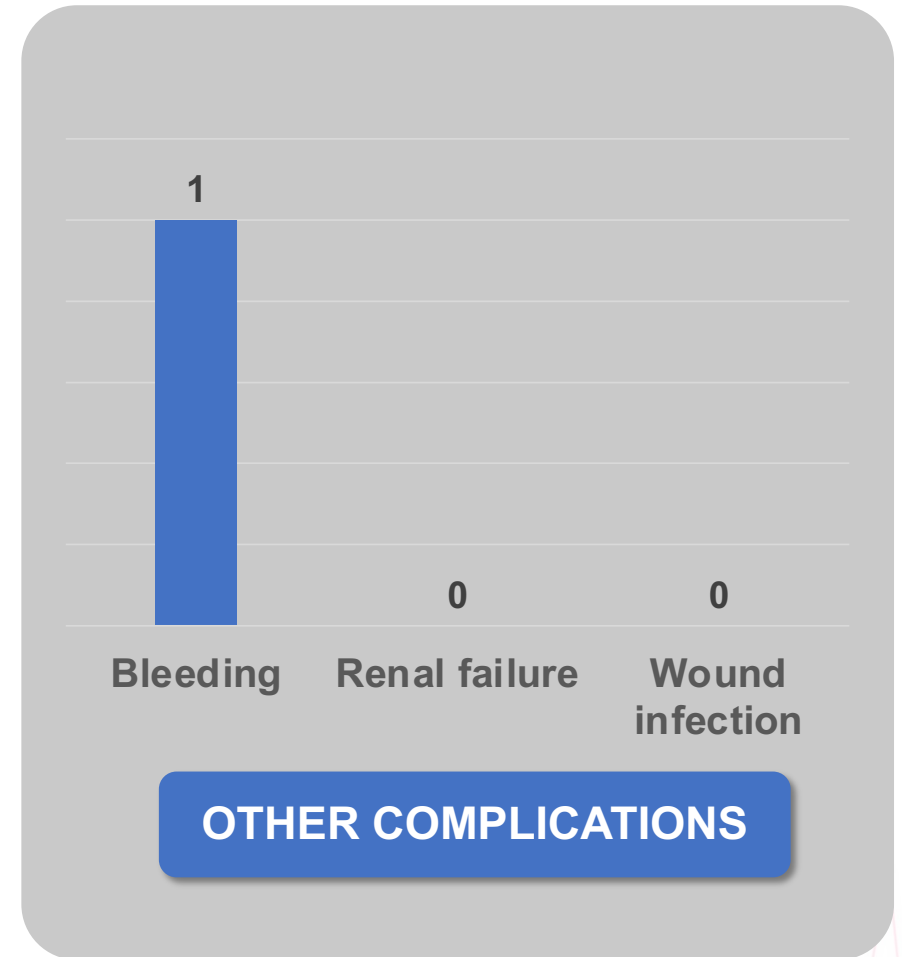
Mean postoperative time
6.97 ± 3,96 days



Carotid related mortality
1 patients (2.2%)



Recurrent stroke
0



MIDTERM RESULTS

MAIN OUTCOMES



Mean follow-up time
34.2 months



Carotid related mortality
1 patients (2.2%)



Recurrent stroke
0



01

Late bleeding
Late bleeding 2 months after surgery

1 pts

02

Cancer
Late mortality due to cancer

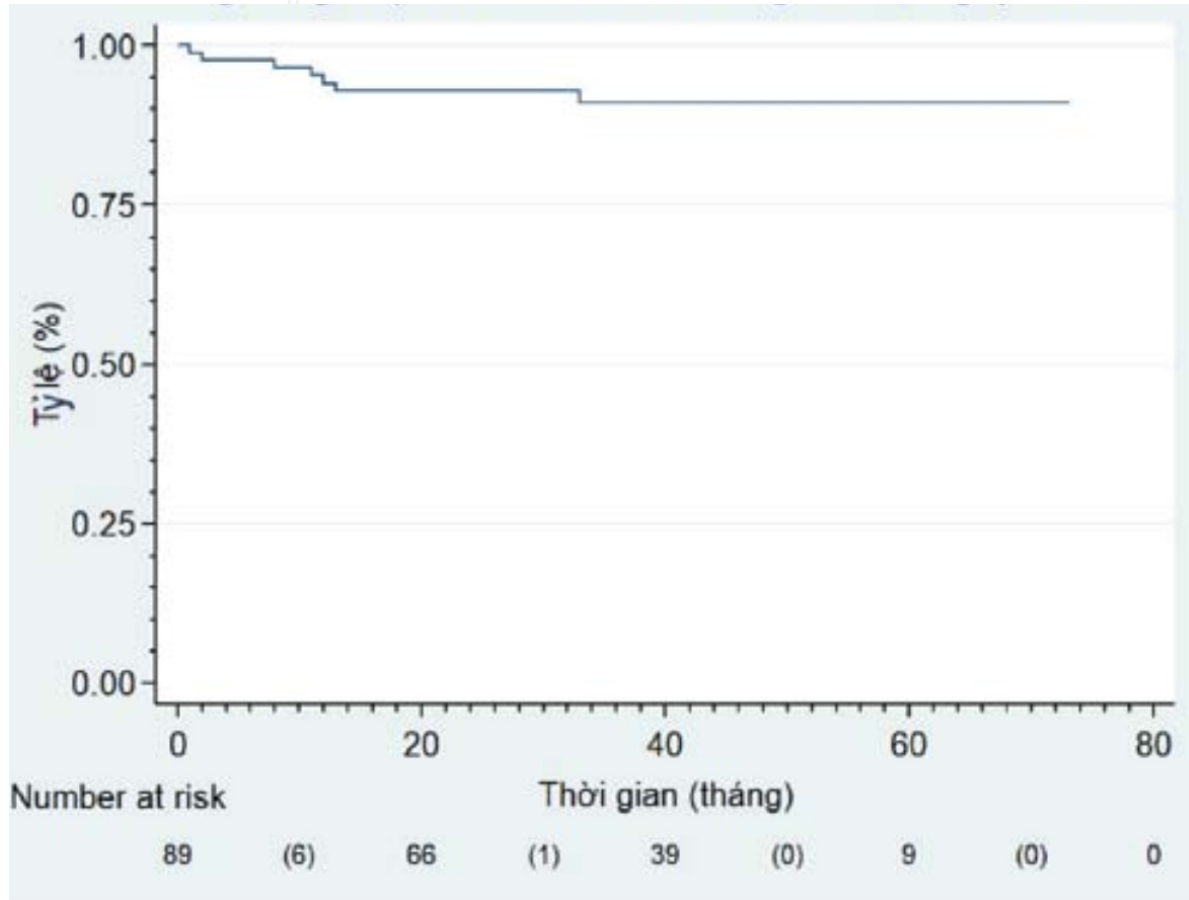
3 pts

03

Heart failure
Late mortality due to heart failure and CAD

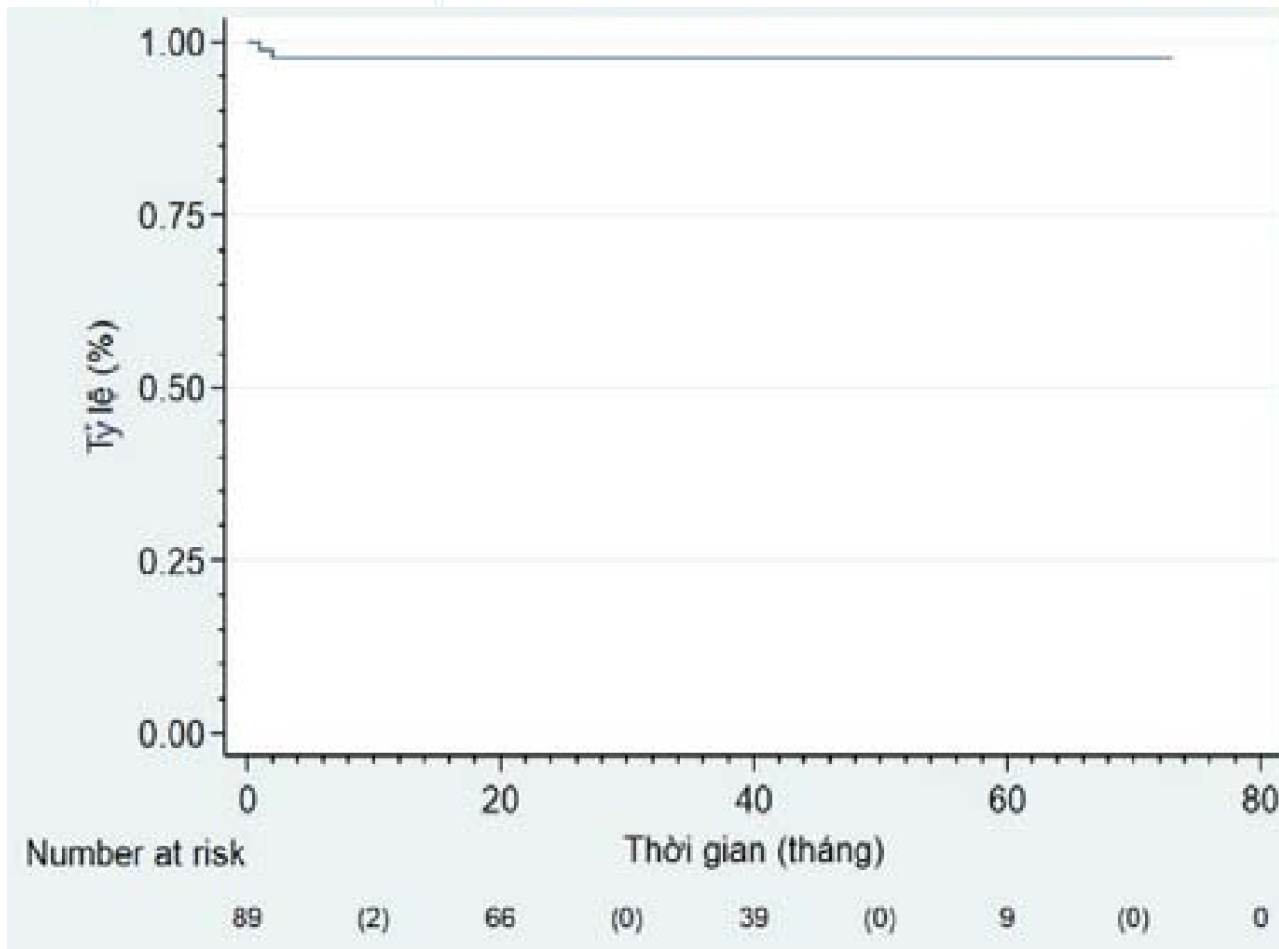
2 pts





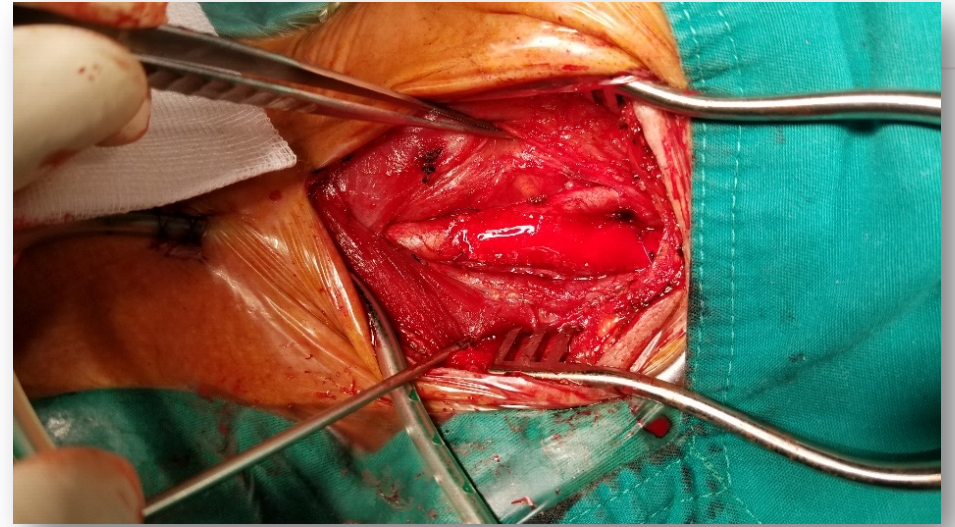
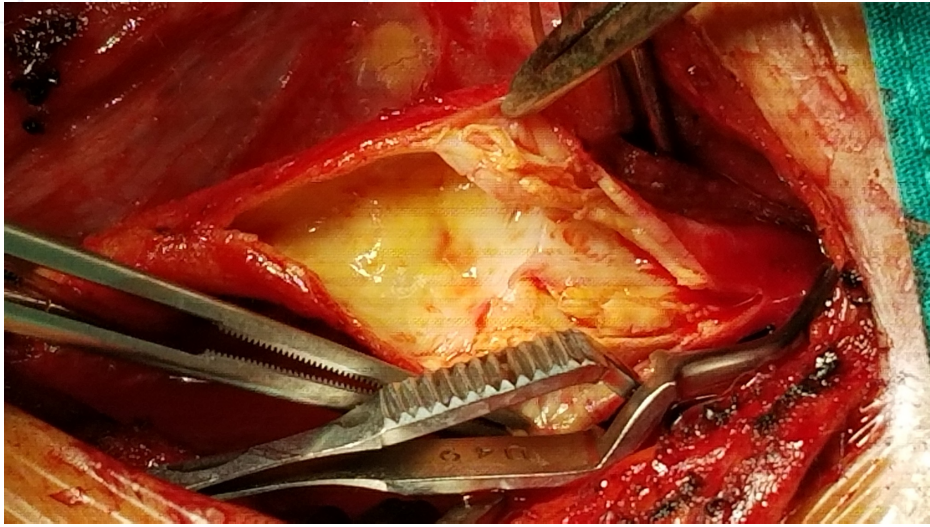
All cause mortality
Kaplan Meier

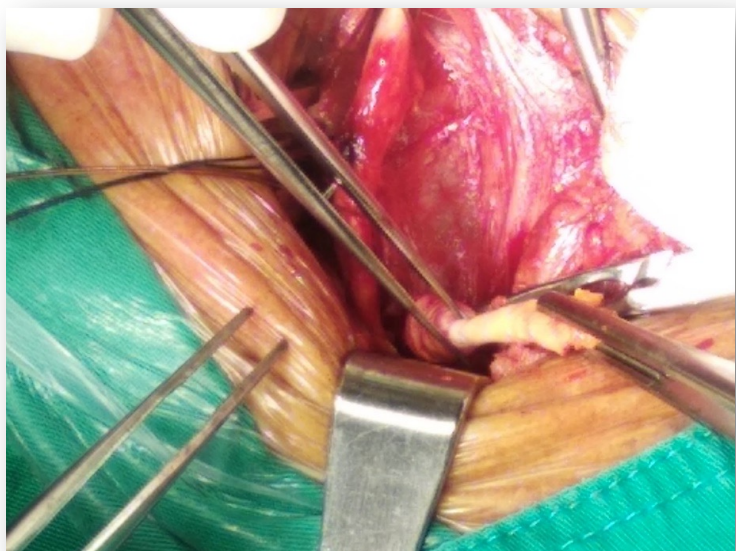




Carotid related mortality
Kaplan Meier

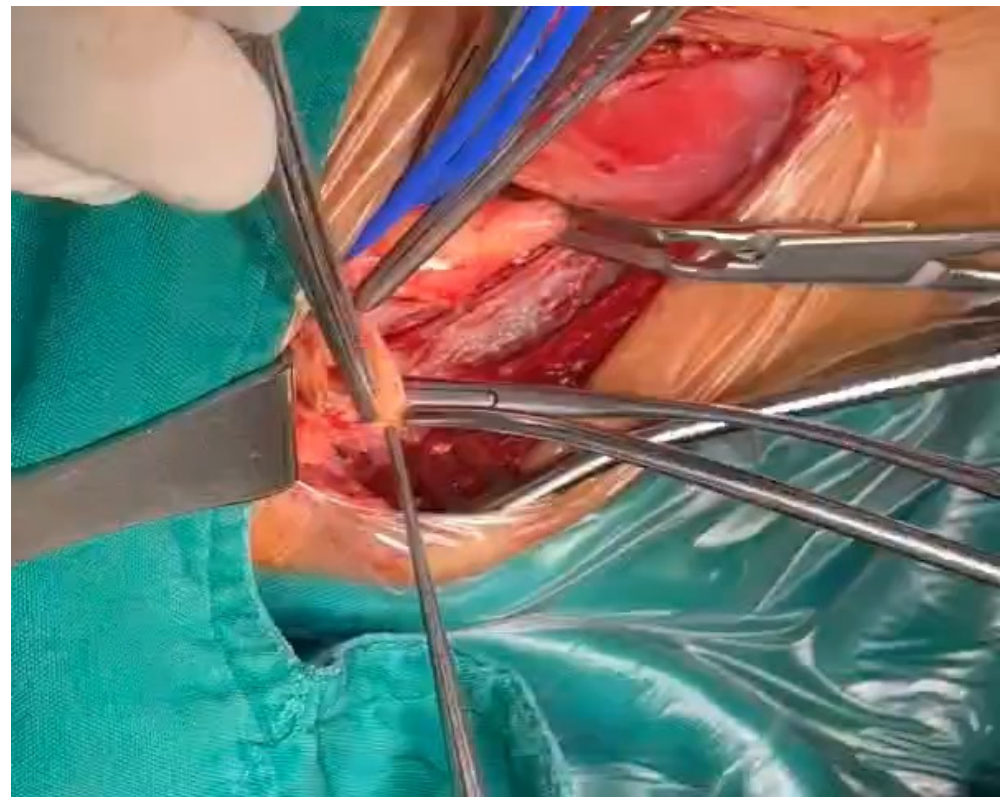








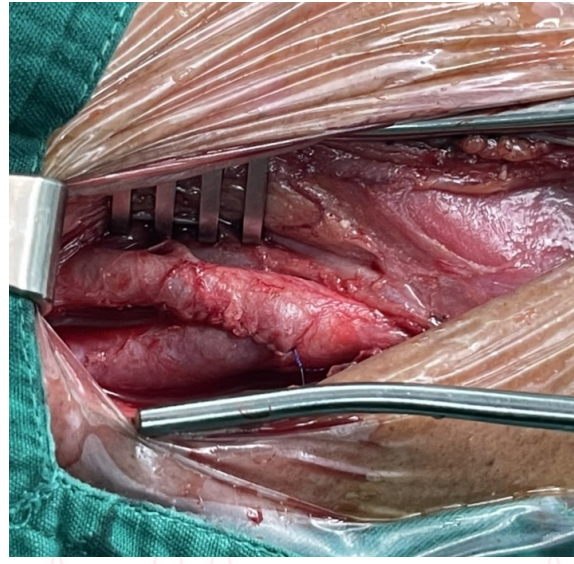
Left



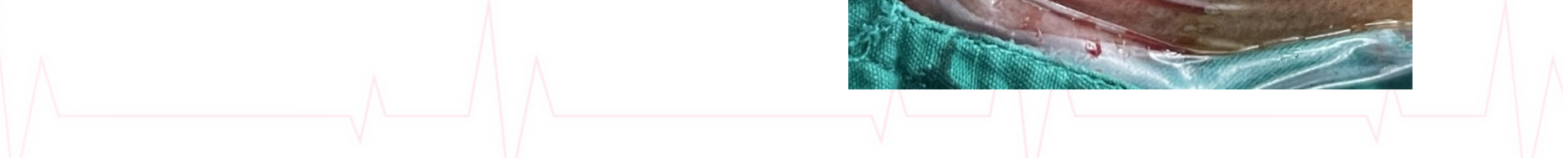
Head

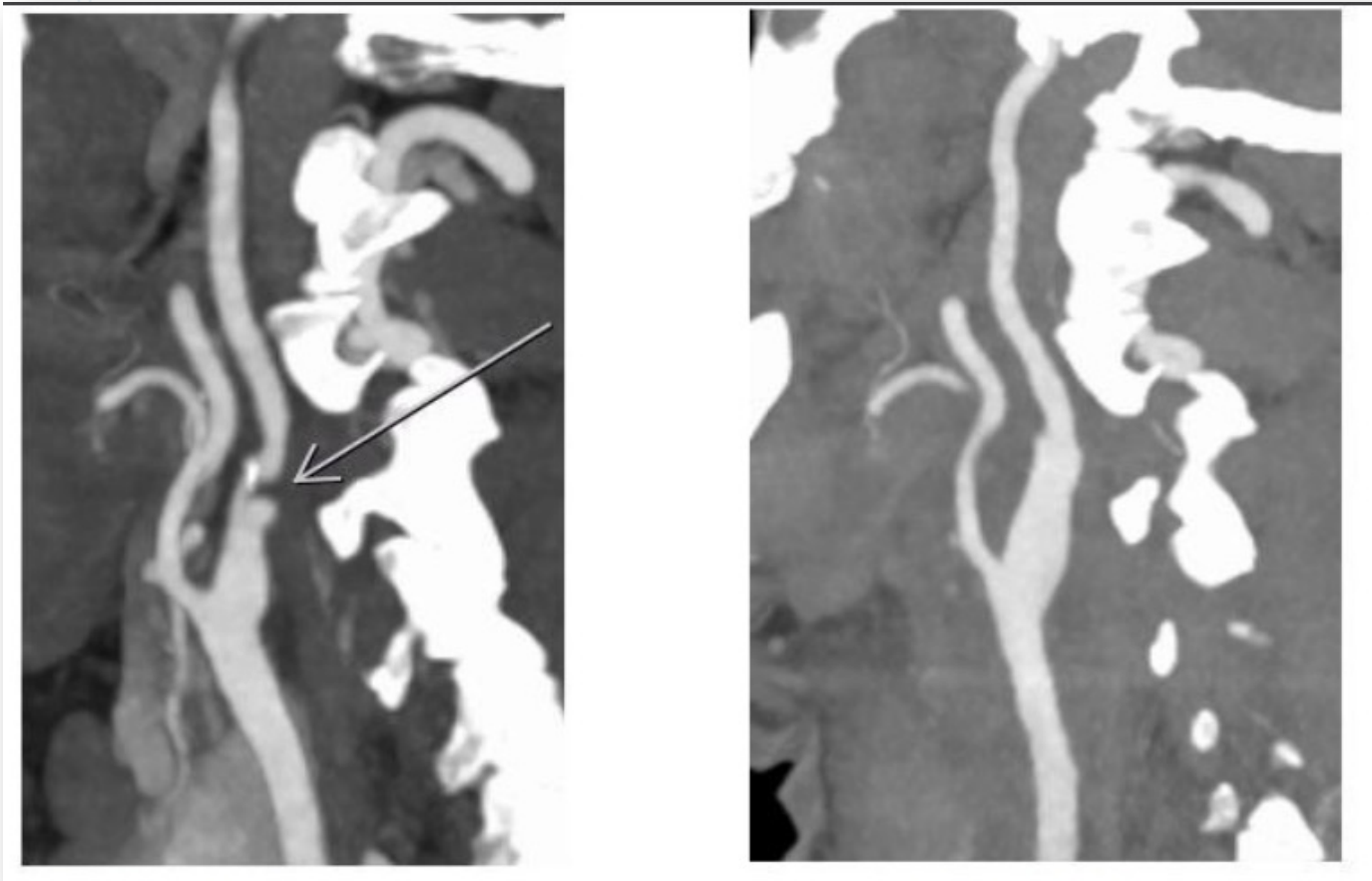


Leg



Right





Trước phẫu thuật

Sau phẫu thuật






DISCUSSION



European Stroke Organisation guideline on endarterectomy and stenting for carotid artery stenosis

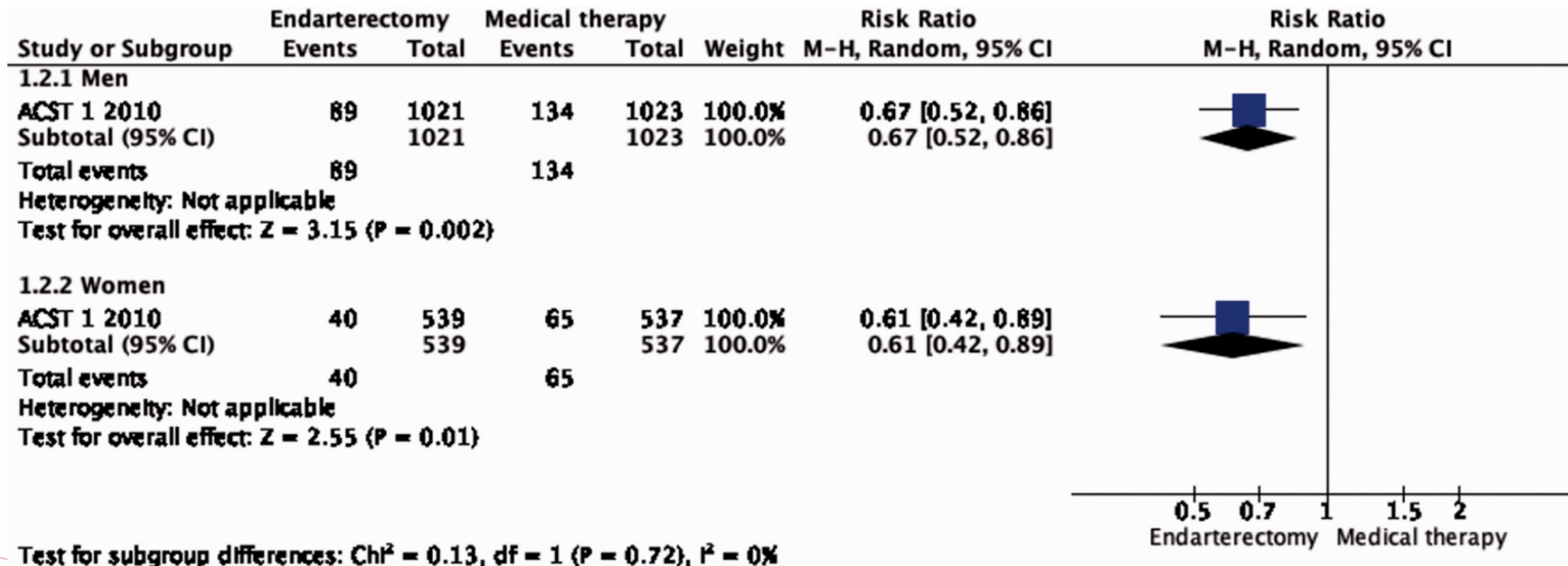
Leo H Bonati, Stavros Kakkos, Joachim Berkefeld, more...

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<https://doi.org/10.1177/23969873211012121>

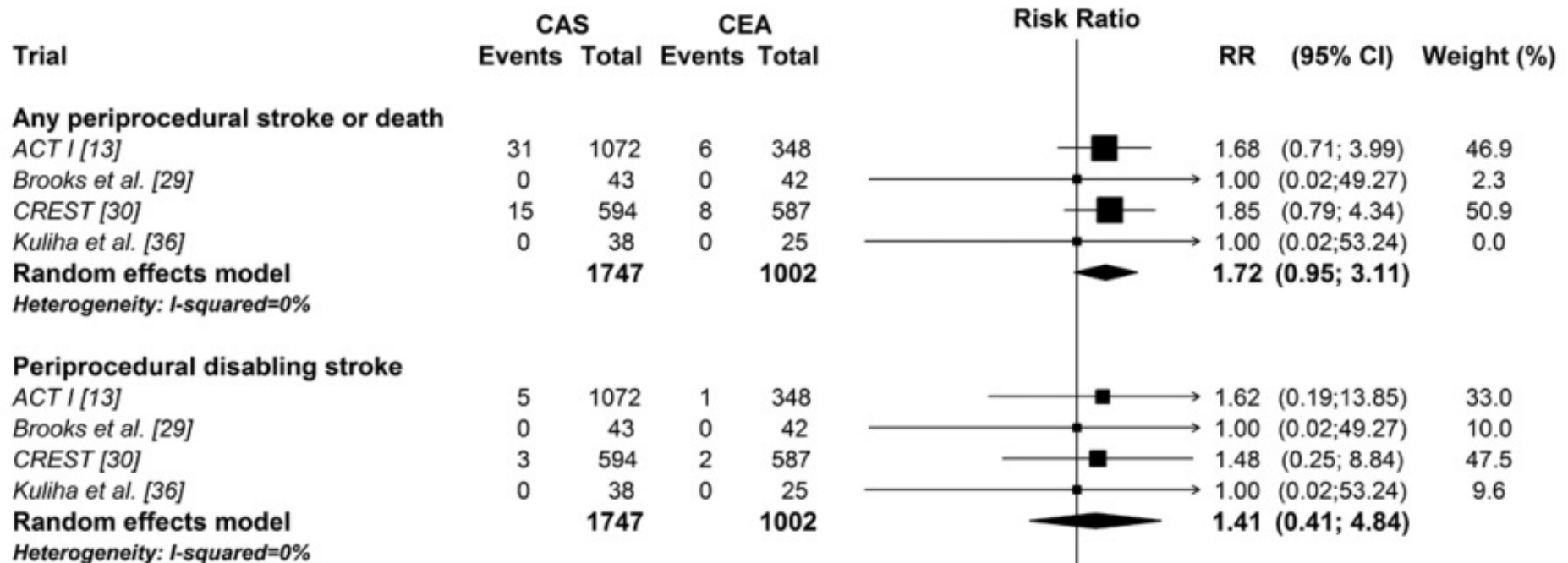


Carotid Stenting Versus Endarterectomy for Asymptomatic Carotid Artery Stenosis

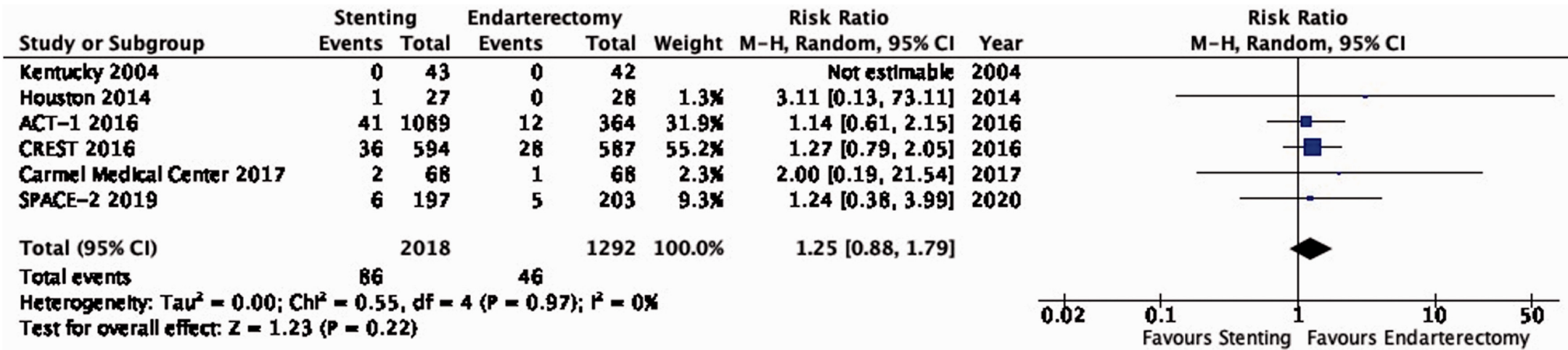
A Systematic Review and Meta-Analysis

Paola Moresoli, Bettina Habib, Pauline Reynier, Matthew H. Secrest, Mark J. Eisenberg and Kristian B. Filion ✉

Originally published 5 Jul 2017 | <https://doi.org/10.1161/STROKEAHA.117.016824> | Stroke. 2017;48:2150–2157

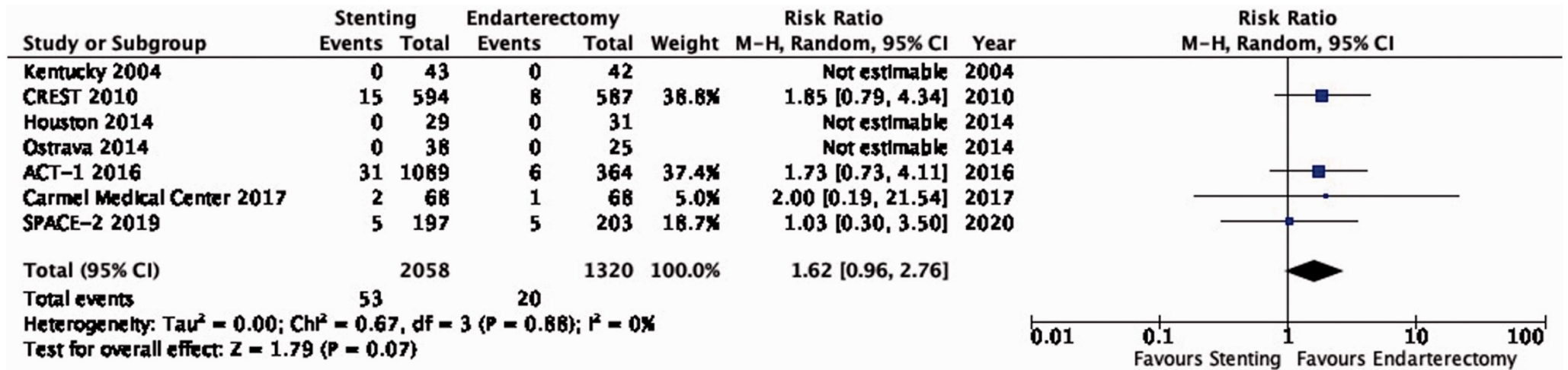


PICO 3.1: In patients with asymptomatic carotid stenosis, do endarterectomy and stenting differ in the long-term risk of ipsilateral stroke, including peri-procedural stroke in any territory or peri-procedural death?

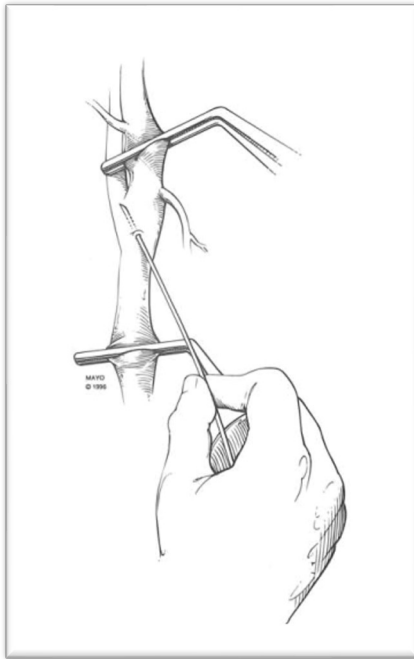


PICO 3.8: In patients with asymptomatic carotid stenosis, do endarterectomy and stenting differ in the risk of peri-procedural stroke or death?

There is moderate quality evidence that stenting is likely associated with an increased risk of peri-procedural stroke or death as compared to endarterectomy (RR: 1.62, 0.96–2.76; 9 more events per 1000 patients, from 1 less to 27 more; [Figure 3.8](#)).



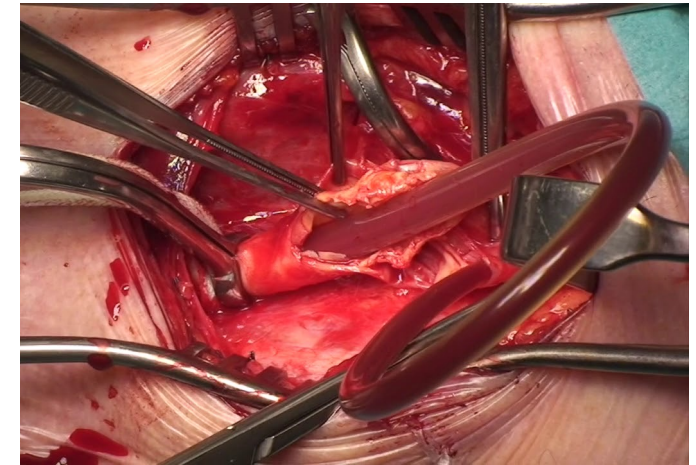
BRAIN PROTECTION STRATEGY



Post clamping pressure measurement



Brain oxygen saturation (INVOS)



Temporary shunt

Clinical validation of 40-mmHg carotid stump pressure for patients undergoing carotid endarterectomy under general anesthesia

Saeid Shahidi ¹, Alan Owen-Falkenberg ², Bo Gottschalksen ³

Results: One hundred and twenty consecutive CEAs were performed in recently symptomatic patients. A significant correlation between SP and the contralateral stenosis degree of internal carotid artery (ICA) was found in our study $P=0.05$. Sixteen patients (14%) had $SP < 40$ mmHg after clamping the carotid arteries. Raising blood pressure intra-operatively by 10-20% reduced the incidence of shunt insertion to only three patients (80% reduction). Of the 120 CEAs, only 2.5% (95% CI 1-6%) of patients required shunt. There was no post-operative TIA or stroke in our study. Two patients (1.65%) suffered early TIA from ipsilateral ICA after discharge from the vascular unit.

Conclusions: Using a mean SP of 40 mmHg as a threshold seems to be a safe, easy and cheap method for selective shunt insertion in fast track CEA under general anesthesia with a zero false-negative rate. Raising the systemic blood pressure by 10-20% during cross clamping increased SP above the threshold value 40 mmHg, thus avoiding shunt insertion in a number of patients.

OUR STRATEGY TO PROTECT THE BRAIN



ROLE OF CAROTID SURGERY IN PROVINCIAL HOSPITAL

NEUROLOGY TEAM

Contribute in creating a sophisticated neurology team

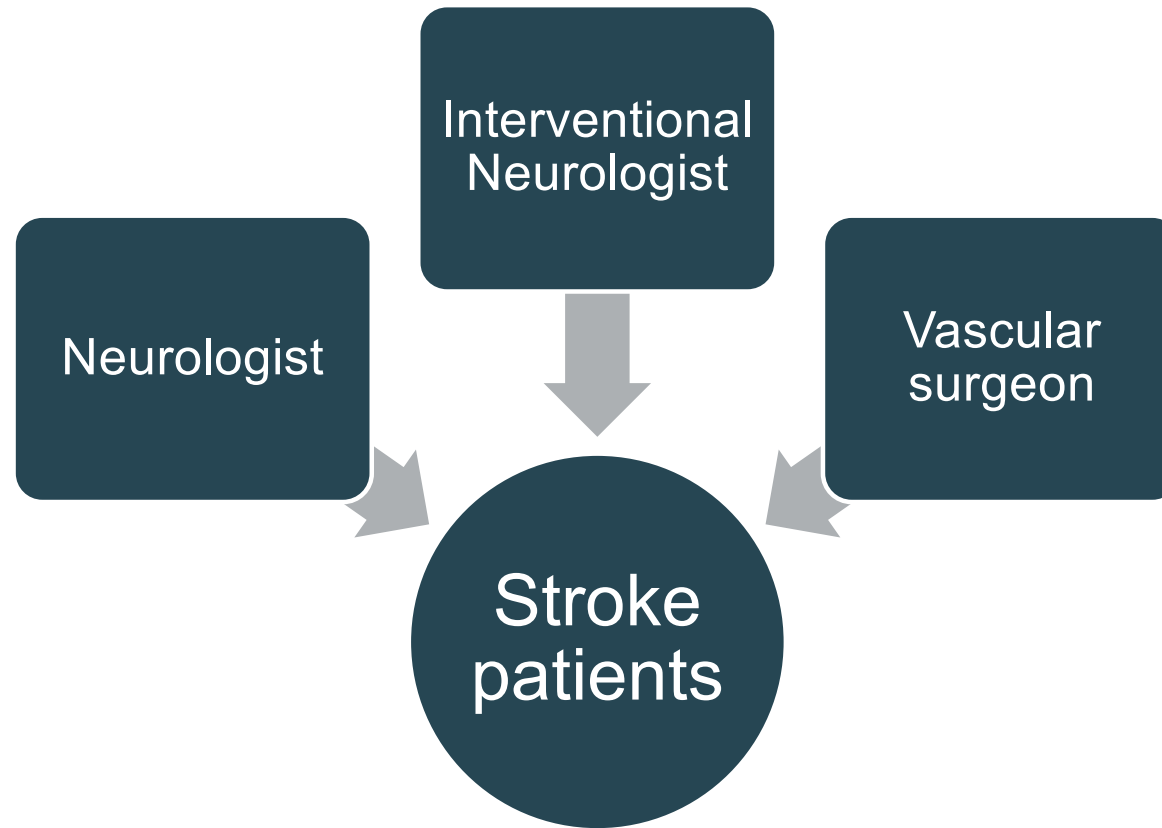
PATIENTS-FOCUS MEDICINE

Provide a full varieties of treatment options for patients

TIME IS BRAIN

Shorten the time from diagnosis to treatment

COORDINATION DIAGRAM



CONCLUSIONS

- Hollistic approach and comprehensive treatment options
- Could be implemented safely and effectively in provincial hospital
- Contribution in developing the hospitals



THANK YOU FOR YOUR ATTENTION

