ΤΑΞΙΝΟΜΗΣΗ ΙΣΧΑΙΜΙΚΩΝ ΑΕΕ

Αθανασάκη Αθανασία, *Ειδικευόμενη Ιατρός*

Νευρολογικό Τμήμα, Διευθυντής: Dr Δ. Καράκαλος

Νοέμβριος 2018

Global burden of stroke

The increased risk of stroke from taking oral contraceptive pills is substantially reduced by using the modern, low-dose pill.

Stroke is the biggest single cause of major disability in the United Kingdom.

Treating hypertension can reduce the risk of a stroke by up to 40%.

Stroke burden is projected to rise from around 38 million DALYs globally in 1990 to 61 million DALYs in 2020.

Healthy years of life lost to stroke

DALYs lost per 1000 population, age-standardized
2002
Disability-adjusted life years combine years of potential life lost due to premature death with years of productive life lost due to disability

- 20 and above
- 15–19
- 10–14
- 5–9
- below 5
- no data

Stroke in young people

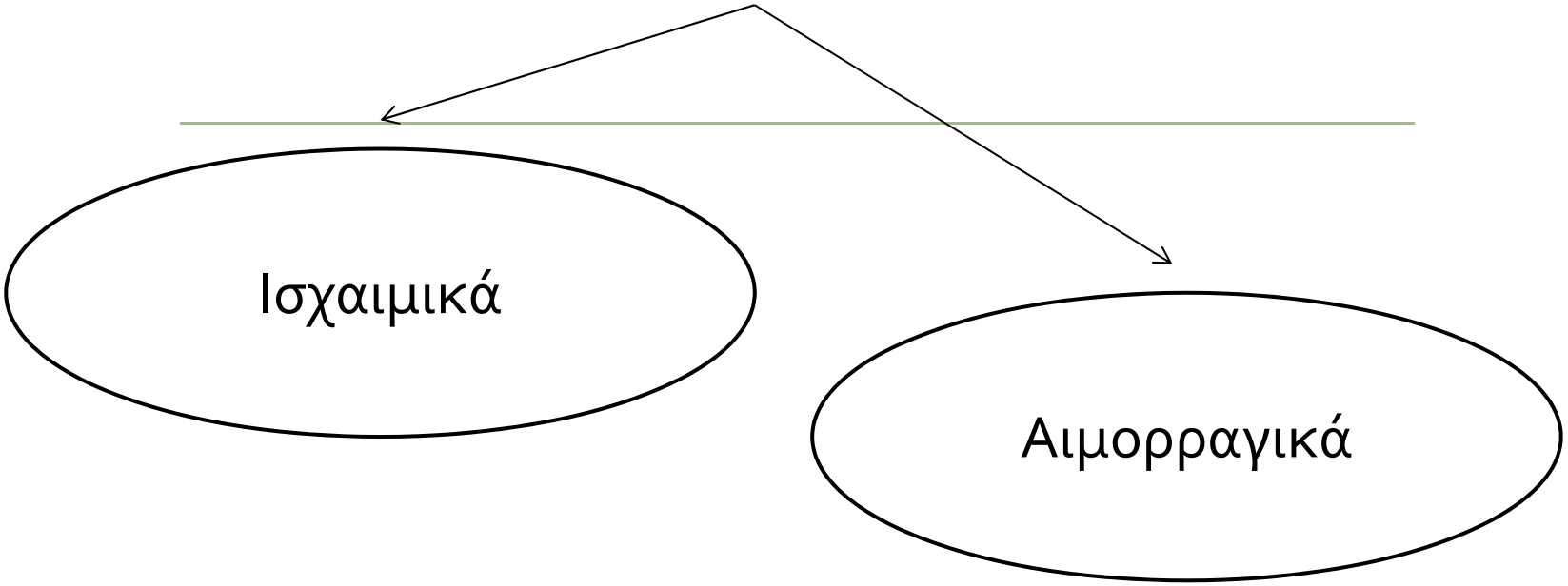
Number of new cases of stroke per 100 000 people per year
selected populations
1986–1997

World Health Organization

The atlas of heart disease and stroke, http://www.who.int

ΑΕΕ

Οξεία εμφάνιση νευρολογικού ελλείμματος



Συστήματα ταξινόμησης ισχαιμικών ΑΕΕ

- National Institute for Neurological Disorders and Blindness (NINDB), 1958
- Harvard Cooperative Stroke Registry, 1978
- Stroke Data Bank, 1988
- **Trial of ORG 10172 in Acute Stroke Treatment (TOAST),** 1993
- Baltimore Washington, 1995
- Stop-Stroke Study TOAST (SSS-TOAST), 2005
- Modified-TOAST by Han et al., 2007
- Causative Classification System (CCS), 2007
- ASCO, 2009[25]Chinese ischemic stroke classification (CISS), 2011
- ASCOD, 2013
- SPARKLE, 2014

TOAST CLASSIFICATION

Ischemic Stroke

Large-artery atherosclerosis (embolus/thrombosis)*

Cardioembolism (high-risk/medium-risk)*

Small-vessel occlusion (lacune)*

Stroke of other determined etiology*

Stroke of undetermined etiology

a. Two or more causes identified

b. Negative evaluation

c. Incomplete evaluation

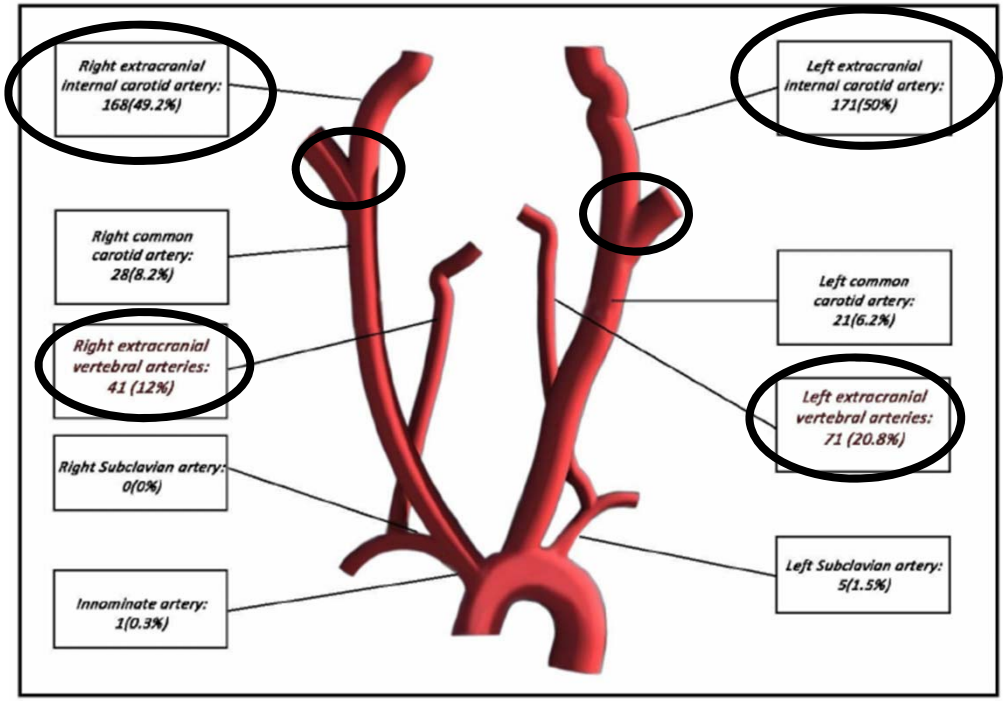
TOAST, Trial of Org 10172 in Acute Stroke Treatment.
*Possible or probable depending on results of ancillary studies.

Αθηροθρόμβωση

➢ **Εξωκρανιακή**

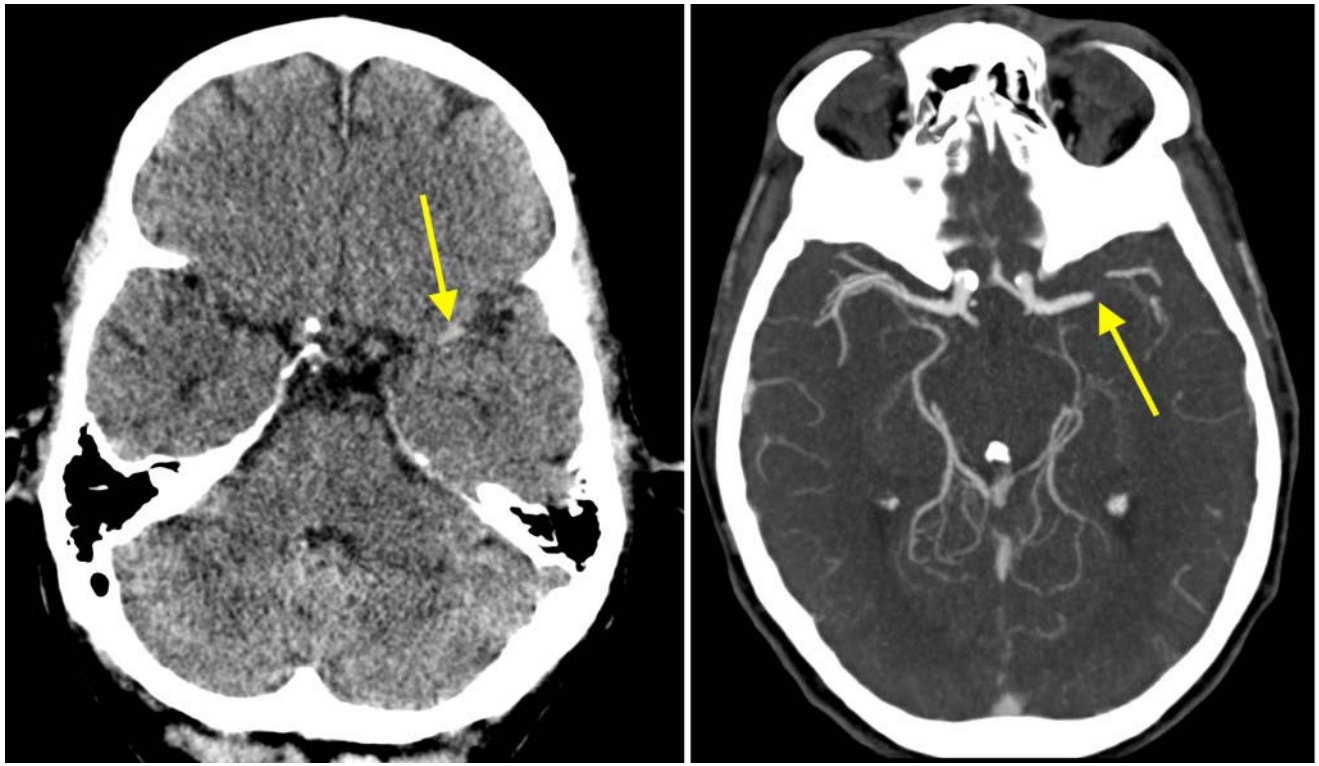
- Χαμηλή παροχή αίματος

- Εμβολή από μία κεντρική αρτηρία σε μία περιφερικότερη



Αθηροθρόμβωση

- **Ενδοκρανιακή**

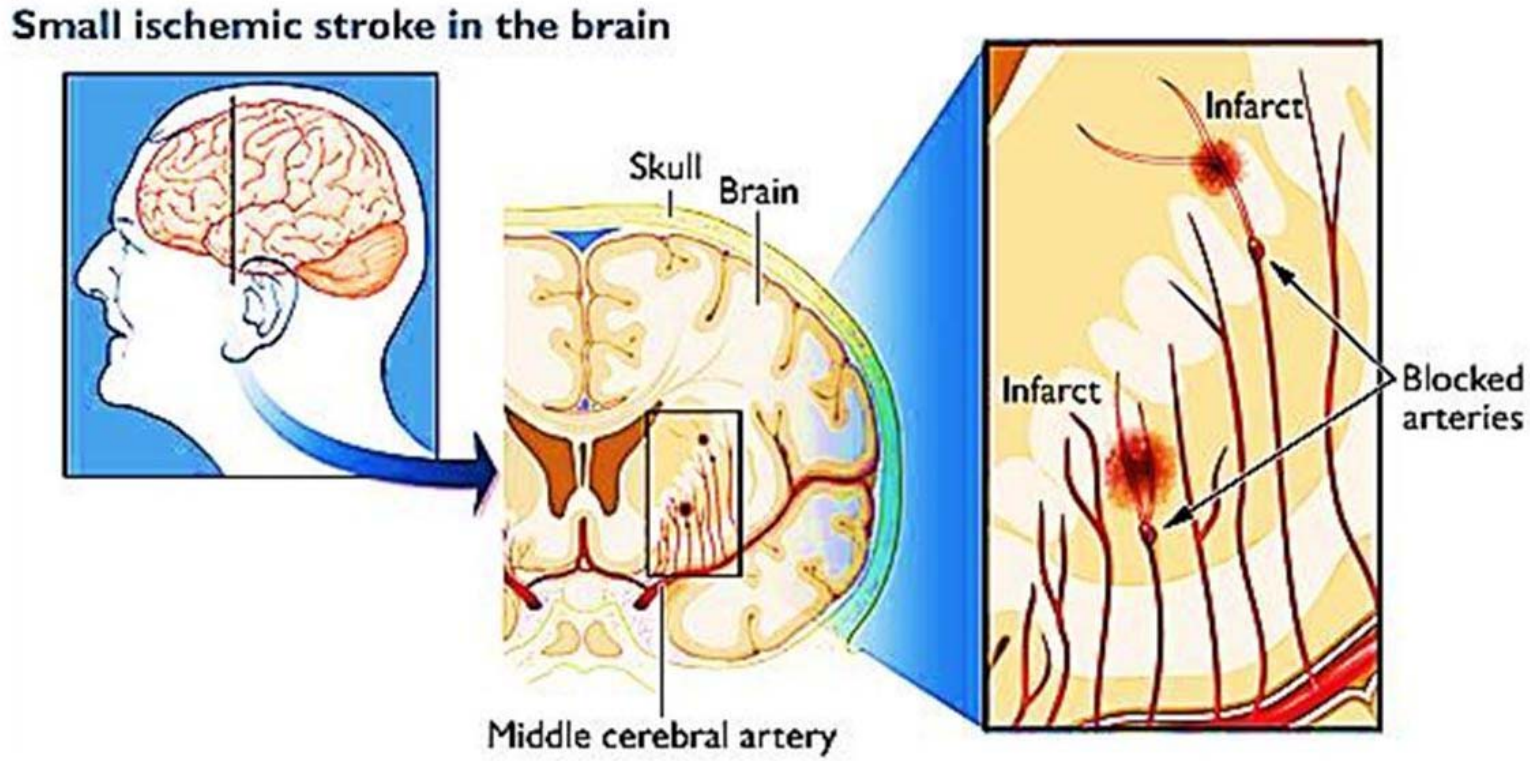


ΚΑΡΔΙΑΚΑ ΕΜΒΟΛΑ

Υψηλός κίνδυνος	Χαμηλός/αβέβαιος κίνδυνος
Παθήσεις Κόλπων	
Κολπική μαρμαρυγή	Ανοικτό ωοειδές τρήμα (PFO)
Εμμένων κολπικός πτερυγισμός	Μεσοκολπικό ανεύρυσμα
Σύνδρομο νοσούντος φλεβοκόμβου	Κολπική αυτόματη αντίθεση
Θρόμβος αριστερού κόλπου	
Θρόμβος στο ωτίο του αριστερού κόλπου	
Μύξωμα αριστερού κόλπου	
Βαλβιδοπάθειες	
Στένωση μιτροειδούς	Επασβέστωση μιτροειδικού δακτυλίου
Προσθετική βαλβίδα	Πρόπτωση μιτροειδούς βαλβίδας
Λοιμώδης ενδοκαρδίτιδα	Ινοελάστωμα
Μη-λοιμώδης ενδοκαρδίτιδα	Giant Lambl's excrescences
Παθήσεις Κοιλιών	
Θρόμβος αριστερής κοιλίας	Ακινησία/δυσκινησία τμήματος κοιλ. τοιχώματος
Μύξωμα αριστερής κοιλίας	Υποβαλβιδική υπερτροφική μυοκαρδιοπάθεια
Πρόσφατο πρόσθιο ΟΕΜ	Συμφορητική καρδιακή ανεπάρκεια
Διατατική μυοκαρδιοπάθεια	

Ferro, Lancet Neurology, 2003

Lacunar Infarcts

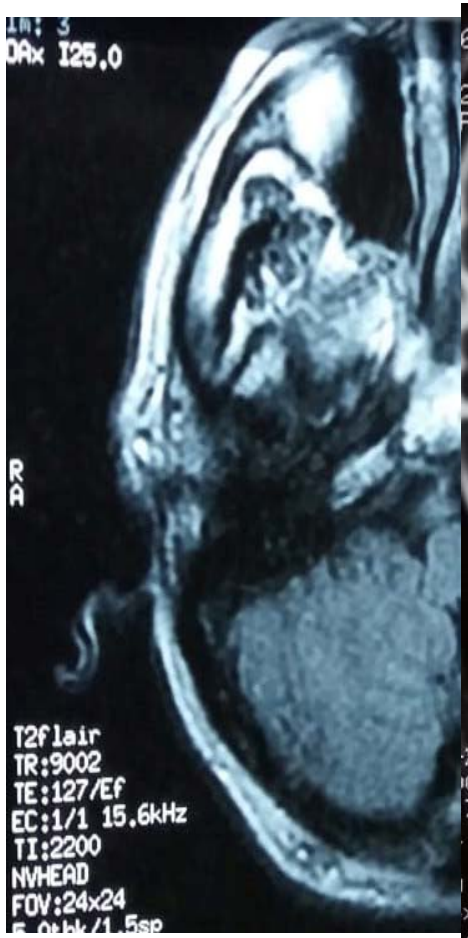


http://el.wiktionary.org/wiki/stroke, Brainin & Heiss, Textbook of Stroke Medicine, 2010

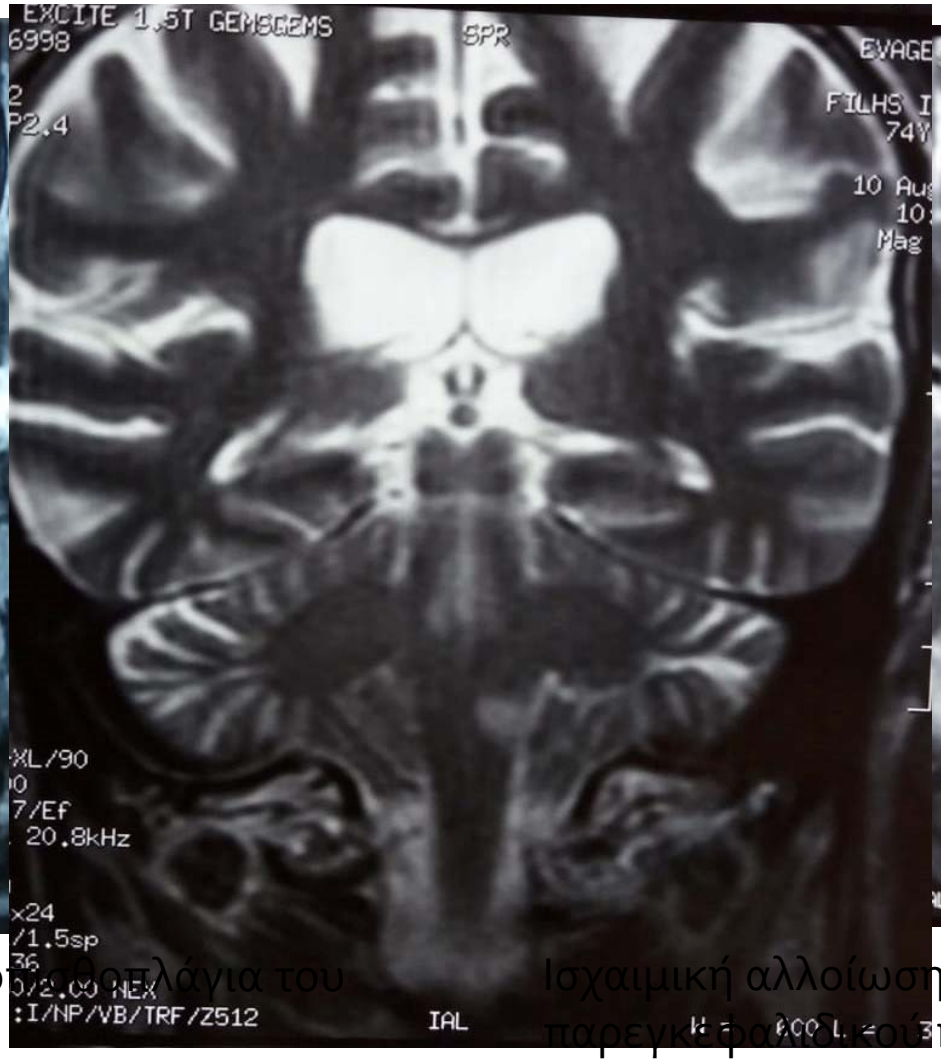
ΑΕΕ άλλης καθορισμένης αιτίας

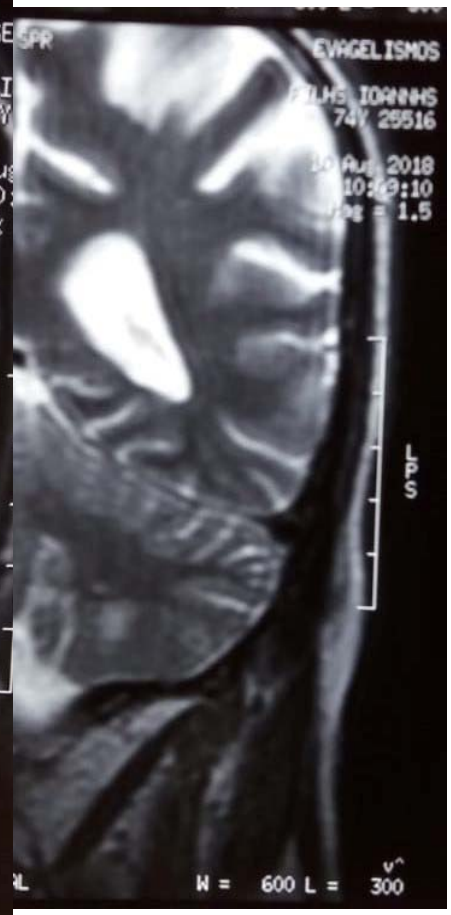
- Διαχωρισμός αρτηρίας
- Αγγειίτιδες
- Φλεβοθρόμβωση
- Αιματολογικά νοσήματα
- Moyamoya
- Binswanger's disease

Απεικονιστικά ευρήματα του ασθενούς



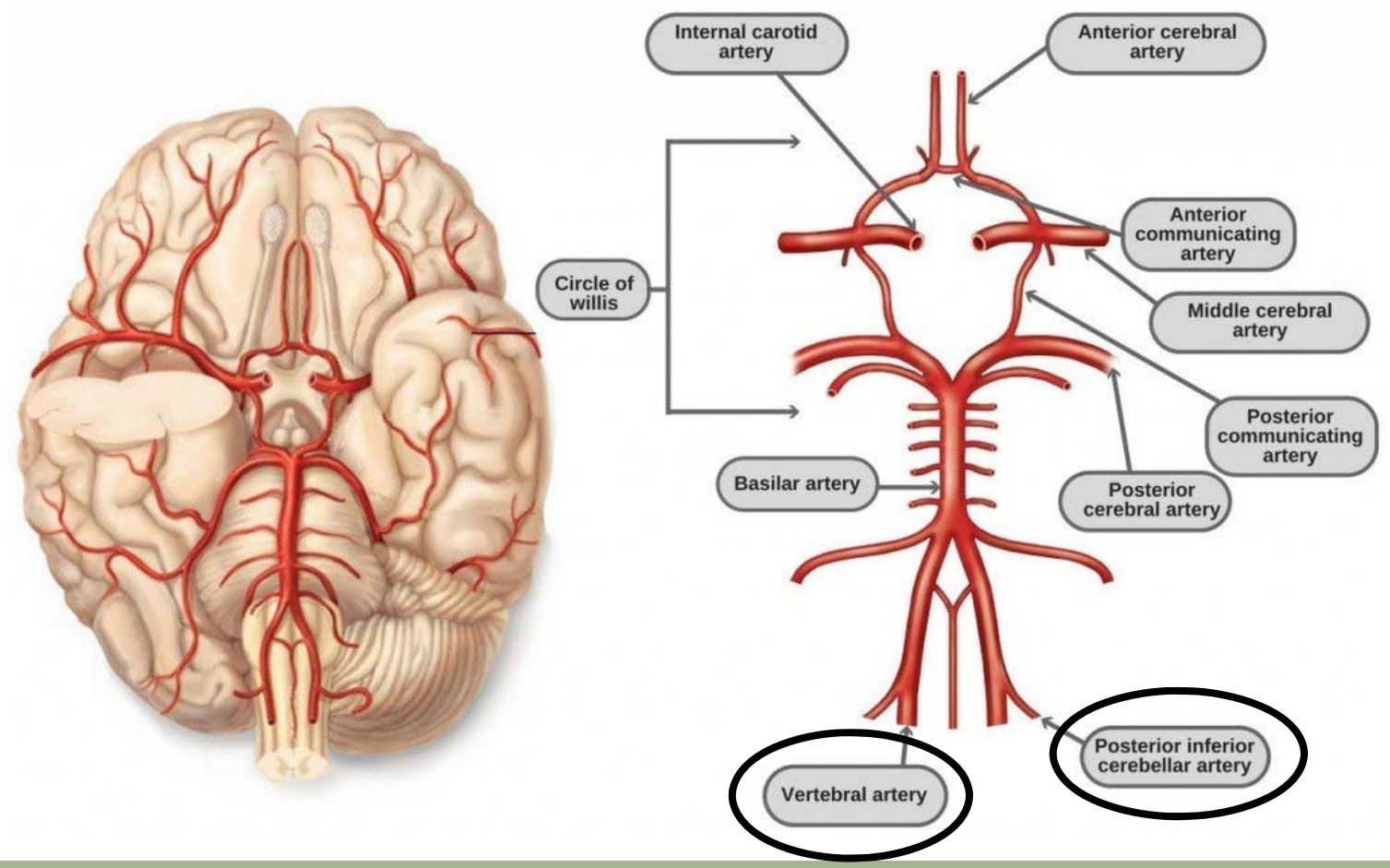
Ισχαιμική αλλοίωση οστεοπλάγια του προμήκους AP





Ισχαιμική αλλοίωση οπισθίως και κάτω παρεγκεφαλιδικού ημισφαιρίου AP

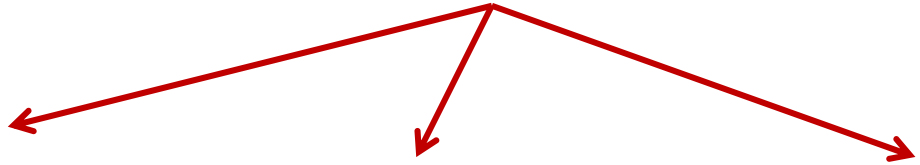
Κατανομή αιμάτωσης των προσβληθέντων αγγείων



Τι έχουμε μέχρι τώρα…

- ✓ CT εγκεφάλου
- ✓ Triplex αγγείων
- ✓ MRI εγκεφάλου
- ✓ CTA

Γιατί πρέπει να συνεχίσουμε;



Σπινθηρογράφημα μυοκαρδίου

ΗΚΓ

Νεοδιαγνωσθείσα ΚΑ αγνώστου αιτιολογίας

Επόμενο βήμα

- **Echo καρδιάς :**

Αυξημένο πάχος τοιχωμάτων ΑΡ κοιλίας (διηθητική νόσος;) με διάχυτη υποκινησία και EF=45%. Διάταση ΑΡ κόλπου. Περιοριστικού τύπου πλήρωση.

ΔΕ κοιλότητες χωρίς διάταση με μειωμένη συστολική απόδοση. Μικρή διαφυγή μιτροειδούς.

Μικρή ποσότητα περικαρδιακής συλλογής.

Συμπερασματικά: *Εικόνα διηθητικής νόσου του μυοκαρδίου, σοβαρού βαθμού διαστολική δυσλειτουργία (grade IV)*

Διηθητικές νόσοι μυοκαρδίου

Conditions With Dilated LV and Infarct Pattern

Condition	Age at Presentation	History	Echocardiography	ECG	CMR LGE	Cardiac Biopsy	Ref. #
Sarcoidosis	Young adults	Congestive heart failure	Variable wall thickness, focal or global hypokinesis, LV aneurysm	Infrahisian block, atypical infarction pattern	Patchy, basal and lateral LV walls	Noncaseating, multinucleated giant cell granuloma surrounded by band of dense collagen fibers	(62,63,65,70)
Wegener disease	Young adults	Chronic upper and lower respiratory tract infections	Regional hypokinesis, pericardial effusion, mild MR, LV systolic dysfunction	Atrial fibrillation, atrioventricular block, atypical infarction pattern	Diffuse, midwall	Vasculitis with necrotizing granulomatous inflammation	(74,75)
Hemochromatosis	Hereditary hemochromatosis: >30 yrs in men, older in women; secondary hemochromatosis: any age	Hereditary hemochromatosis: liver function abnormalities, weakness and lethargy, skin hyperpigmentation, diabetes mellitus, arthralgia, impotence in men; secondary hemochromatosis: hemolytic anemia, multiple blood transfusions	Dilated LV with global systolic dysfunction	Supraventricular arrhythmia, ventricular conduction abnormality is rare		Iron deposits within the myocyte	(4,77–79)
Differential diagnoses							
Ischemic cardiomyopathy	Adult	Coronary artery disease, congestive heart failure	Dilated LV, regional hypokinesis corresponding to perfusion territory, decreased systolic function	Multiform premature ventricular complexes, nonsustained ventricular tachycardia	Subendocardial, different degrees of transmural extension, corresponds to perfusion territory		(3,78)
Idiopathic dilated cardiomyopathy	Adult	Congestive heart failure, no known cardiovascular disease	Dilated LV with global systolic dysfunction	Atrial fibrillation	No LGE, or if present, midwall and patchy		(3,78)

MR = mitral regurgitation; other abbreviations as in Table 1.

Infiltrative Cardiovascular Diseases, J Am Coll Cardiol 2010;55:1769–79

Διηθητικές νόσοι μυοκαρδίου

Conditions Presenting With Increased LV Mass and Thick Ventricular Walls

Condition	Age at Presentation	History and Clinical Presentation	Echocardiography	ECG Profile	CMR LGE	Biopsy	Ref. #
Cardiac amyloid	>30 yrs	Heart failure symptoms, nephrotic syndrome, idiopathic peripheral neuropathy, unexplained hepatomegaly	Symmetrical increase in LV and RV wall thickness, dilated LA and RA, granular appearance of myocardium, pericardial effusion, decreased EF in advanced cases	Decreased or normal QRS complex voltage, pseudoinfarction in inferolateral leads	Global, diffuse, pronounced in subendocardium; RV and LV walls	Myocyte atrophy, amyloid replaces normal cardiac tissue	(3,7,10)
Fabry disease	Male: 11 ± 7 yrs; female: 23 ± 16 yrs	Neuropathic pain, impaired sweating, skin rashes	Symmetrical increase in LV and RV wall thickness, normal EF	Increased or normal QRS complex voltage, short or prolonged PR interval	Focal, midwall, inferolateral wall	Enlarged myocytes with clusters of concentric glycolipid (myelinoid bodies) within lysosomes	(3,22,28,29)
Danon disease	<20 yrs	Heart failure, skeletal myopathy, mental retardation	Very thick LV (20–60 mm), RV may or may not be thick, decreased EF	Increased or normal QRS complex voltage, short PR interval (delta wave)	Subendocardial, does not correspond to perfusion territory	Sarcoplasmic vacuolization, focal storage of PAS-positive material, myofibrillar disarray	(32,34,36)
Friedreich ataxia	25 yrs (range 2–51 yrs)	Gait abnormality	Increase in LV septal and posterior wall thickness, normal EF	Normal QRS complex voltage, ventricular tachycardia		Nonspecific	(41,42,44,47)
Cardiac oxalosis	>20 yrs	Juvenile urolithiasis and nephrocalcinosis	Symmetrical increase in LV and RV wall thickness; patchy, echodense speckled reflection; normal EF	Increased or normal QRS complex voltage, complete heart block	Increased myocardium attenuation on CT	Intra- and extracellular deposition of oxalate crystals without concomitant inflammation and necrosis	(49,50,51)
Mucopolysaccharidoses	1–24 yrs (median, 10 yrs)	Variable depending on subtype, coarse facial features, delayed mental development, skeletal deformities, corneal clouding, hepatosplenomegaly	Asymmetrical septal hypertrophy, mitral and/or aortic valve stenosis or insufficiency, normal EF	Increased or decreased QRS complex voltage, malignant arrhythmia		Swollen myocytes with clear cytoplasm due to accumulation of mucopolysaccharides within lysosomes	(12,53,55,56)
Differential diagnosis							
Hypertrophic cardiomyopathy	17–18 yrs	Maybe asymptomatic, dyspnea, angina, syncope, sudden death	Asymmetrical hypertrophy, small LV cavity, LVOT obstruction, normal EF	Increased QRS complex voltage, pseudo–delta wave, giant T-wave inversion	Patchy, midwall, junctions of the ventricular septum and RV	Myocyte hypertrophy, myofibrillar disarray, and interstitial fibrosis	(4)
Hypertensive heart disease	Adults	History of hypertension	Symmetrical increase in LV wall thickness, mild LV dilation, normal EF	Increased QRS complex, nonspecific ST-T-wave changes	No pattern, predominantly subendocardial	Enlarged myocytes with enlarged or replicated nuclei	(4)

CMR = cardiac magnetic resonance; CT = computed tomography; ECG = electrocardiogram; EF = ejection fraction; LA = left atrium; LGE = late gadolinium enhancement; LV = left ventricle; LVOT = left ventricular outflow tract; RA = right atrium; RV = right ventricle.

Infiltrative Cardiovascular Diseases, J Am Coll Cardiol 2010;55:1769–79

ΕΥΧΑΡΙΣΤΩ ΠΟΛΥ