

# ΥΠΕΡΤΑΣΙΚΗ ΑΙΧΜΗ-ΚΡΙΣΗ

ΚΕΣΥ-ΙΕΑ 2023  
ΣΕΜΙΝΑΡΙΑ ΠΡΟΚΑΤΑΡΚΤΙΚΗΣ ΚΛΙΝΙΚΗΣ ΑΣΚΗΣΗΣ

Α Κόλλιας  
Καθηγητής Παθολογίας

Κέντρο Υπέρτασης, Γ' Παθολογική Κλινική  
Πανεπιστημίου Αθηνών, ΓΝΝΘΑ 'Η  
Σωτηρία', Αθήνα



# ΕΚΠΑΙΔΕΥΤΙΚΑ ΑΝΤΙΚΕΙΜΕΝΑ

- Κατανόηση βασικών αρχών μεθοδολογίας μέτρησης ΑΠ
- Διάκριση μεταξύ «υπερεπείγουσας» (κρίσης) και «επείγουσας» (αιχμής) υπέρτασης
- Εφαρμογή διαγνωστικού αλγορίθμου για αναζήτηση βλάβης οργάνου-στόχου
- Εφαρμογή θεραπευτικού αλγορίθμου
- Αναγνώριση εξατομικευμένων στόχων θεραπείας

# ΠΕΡΙΠΤΩΣΗ 1

- Γυναίκα 63 ετών παχύσαρκη, με ιστορικό υπέρτασης υπό αγωγή
- Προέρχεται στο Τ.Ε.Π. λόγω κεφαλαλγίας και ρινορραγίας
- Από την κλινική εξέταση ΑΠ 210/113 mmHg, 89 bpm, Sat 99%.

# ΠΕΡΙΠΤΩΣΗ 2

- Άνδρας 67 ετών με ΣΔ και υπέρταση προσέρχεται στο Τ.Ε.Π. λόγω δύσπνοιας από ωρών
- ΑΤ 206/102 mmHg-104 bpm
- Αρρυθμία
- Ταχύπνοια - Sat 92% - μη μουσικοί ρόγχοι σε βάσεις πνευμονικών πεδίων

# ΥΠΕΡΤΑΣΙΚΗ ΑΙΧΜΗ-ΚΡΙΣΗ

- ✓ Μεθοδολογία μέτρησης ΑΠ
- ✓ Ορισμοί
- ✓ Επιδημιολογία
- ✓ Διαγνωστικός Αλγόριθμος
- ✓ Θεραπεία

ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ

# ΕΥΡΩΠΑΙΚΕΣ ΚΑΤΕΥΘΥΝΤΗΡΙΕΣ ΟΔΗΓΙΕΣ ΓΙΑ ΤΗΝ ΥΠΕΡΤΑΣΗ



**ESC**

European Society  
of Cardiology

European Heart Journal (2018) 00, 1–98

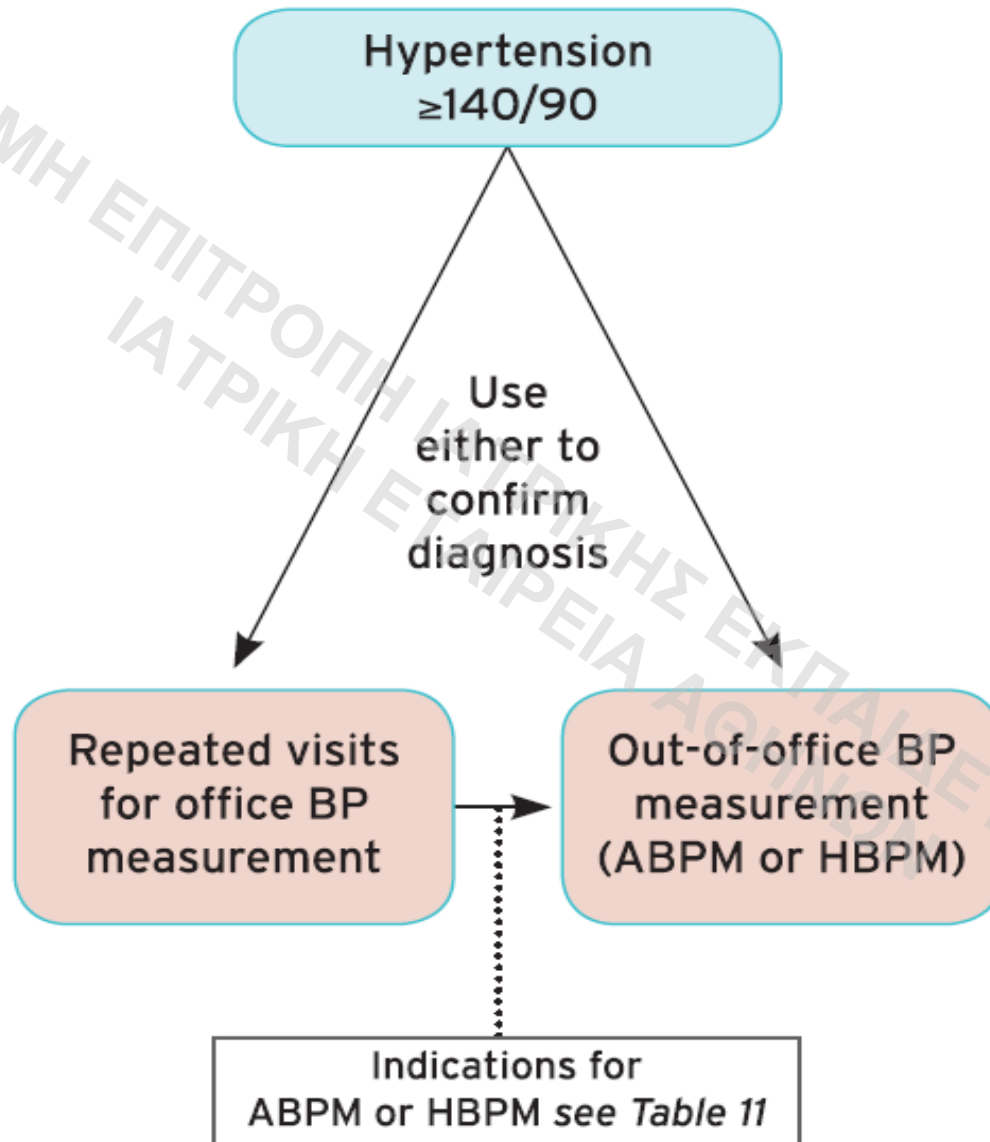
doi:10.1093/eurheartj/ehy339

**ESC/ESH GUIDELINES**

## 2018 ESC/ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH)

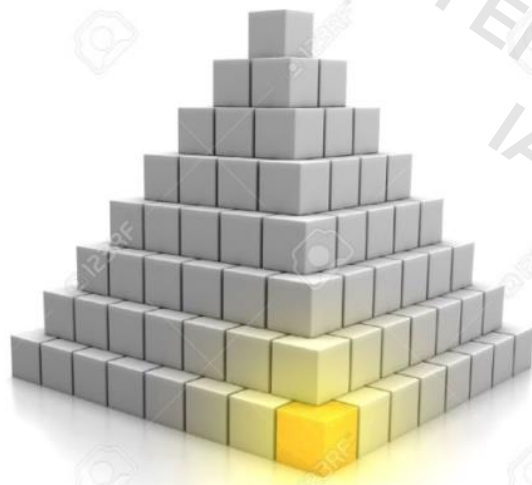
# ESC/ESH 2018 Guidelines





# Μετρήσεις ΑΤ στο Ιατρείο

MONIMH EΠITHXH IATPHKHTH ETAIPEIA



**Table 3** Classification of office blood pressure<sup>a</sup> and definitions of hypertension grade<sup>b</sup>

Category	Systolic (mmHg)		Diastolic (mmHg)
Optimal	<120	and	<80
Normal	120–129	and/or	80–84
High normal	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	160–179	and/or	100–109
Grade 3 hypertension	≥180	and/or	≥110
Isolated systolic hypertension <sup>b</sup>	≥140	and	<90

**Table 19** Summary of office blood pressure thresholds for treatment

Age group	Office SBP treatment threshold (mmHg)					Office DBP treatment threshold (mmHg)
	Hypertension	+ Diabetes	+ CKD	+ CAD	+ Stroke/TIA	
18–65 years	≥140	≥140	≥140	≥140 <sup>a</sup>	≥140 <sup>a</sup>	≥90
65–79 years	≥140	≥140	≥140	≥140 <sup>a</sup>	≥140 <sup>a</sup>	≥90
≥80 years	≥160	≥160	≥160	≥160	≥160	≥90
Office DBP treatment threshold (mmHg)	≥90	≥90	≥90	≥90	≥90	

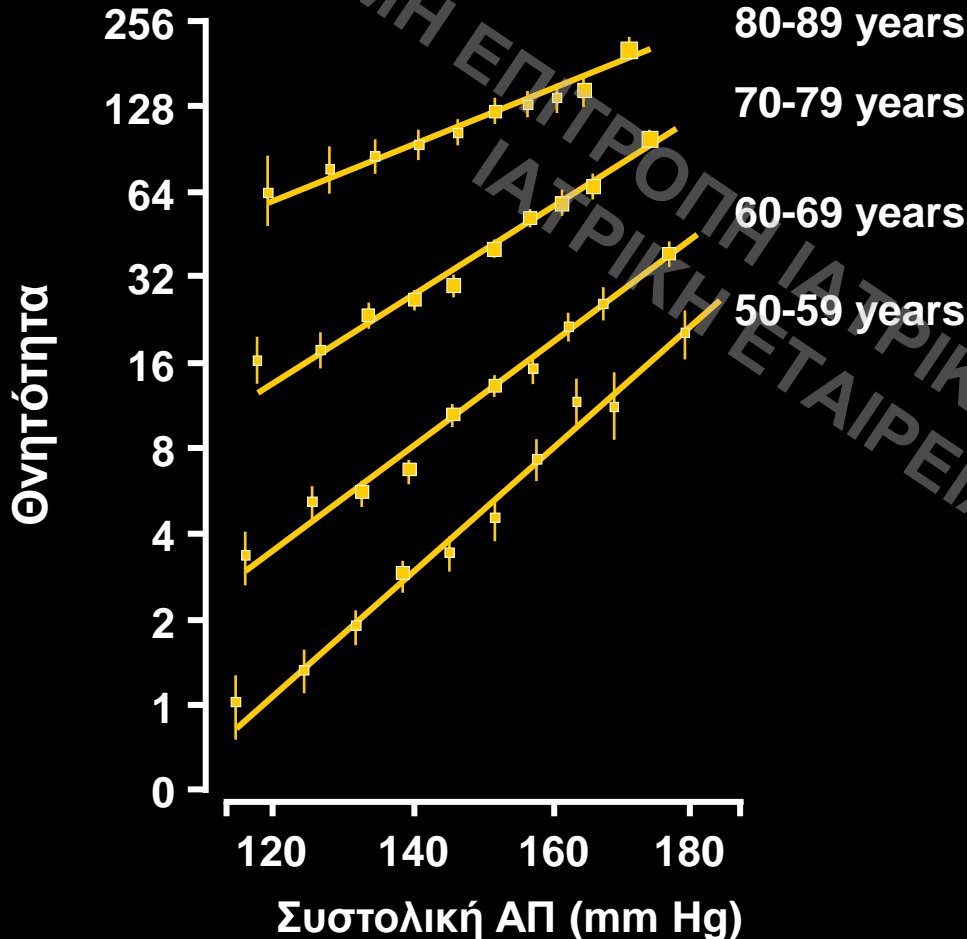
**Table 23** Office blood pressure treatment target range

Age group	Office SBP treatment target ranges (mmHg)					Office DBP treatment target range (mmHg)
	Hypertension	+ Diabetes	+ CKD	+ CAD	+ Stroke <sup>a</sup> /TIA	
18–65 years	Target to 130 or lower if tolerated Not <120	Target to 130 or lower if tolerated Not <120	Target to <140 to 130 if tolerated	Target to 130 or lower if tolerated Not <120	Target to 130 or lower if tolerated Not <120	70–79
65–79 years <sup>b</sup>	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	70–79
≥80 years <sup>b</sup>	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	Target to 130–139 if tolerated	70–79
Office DBP treatment target range (mmHg)	70–79	70–79	70–79	70–79	70–79	

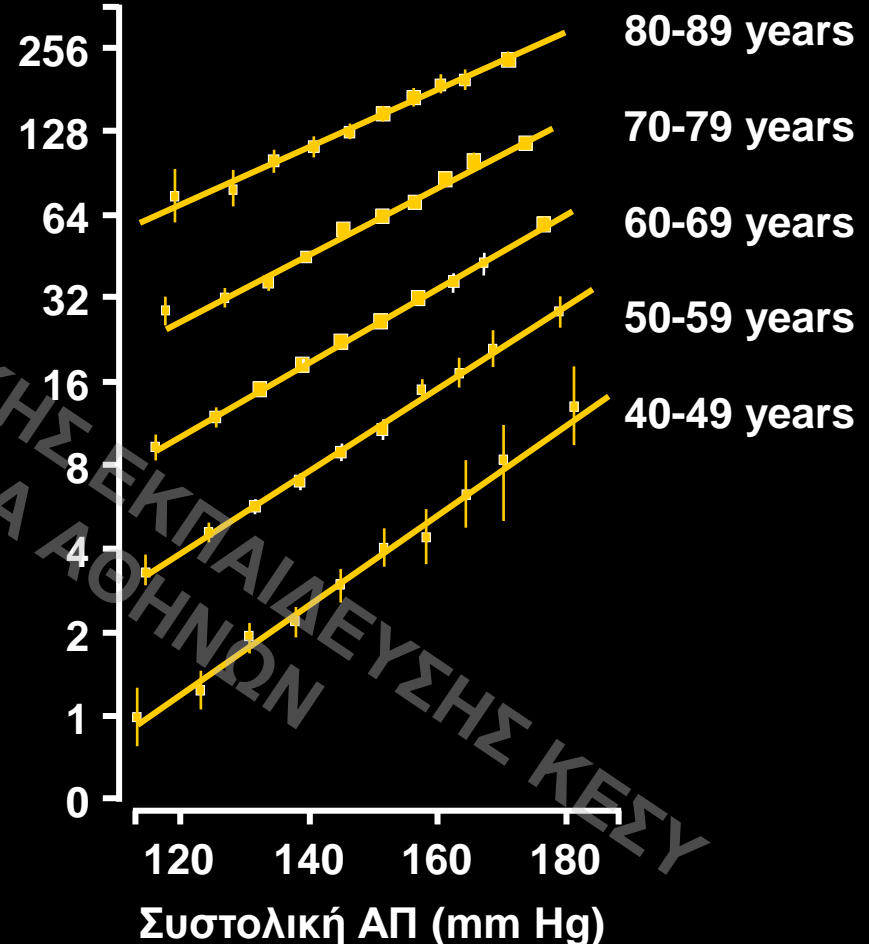


# ΣΥΣΤΟΛΙΚΗ ΑΠ ΚΑΙ ΚΑΡΔΙΑΓΓΕΙΑΚΟΣ ΚΙΝΔΥΝΟΣ

## ΑΕΕ



## ΣΝ

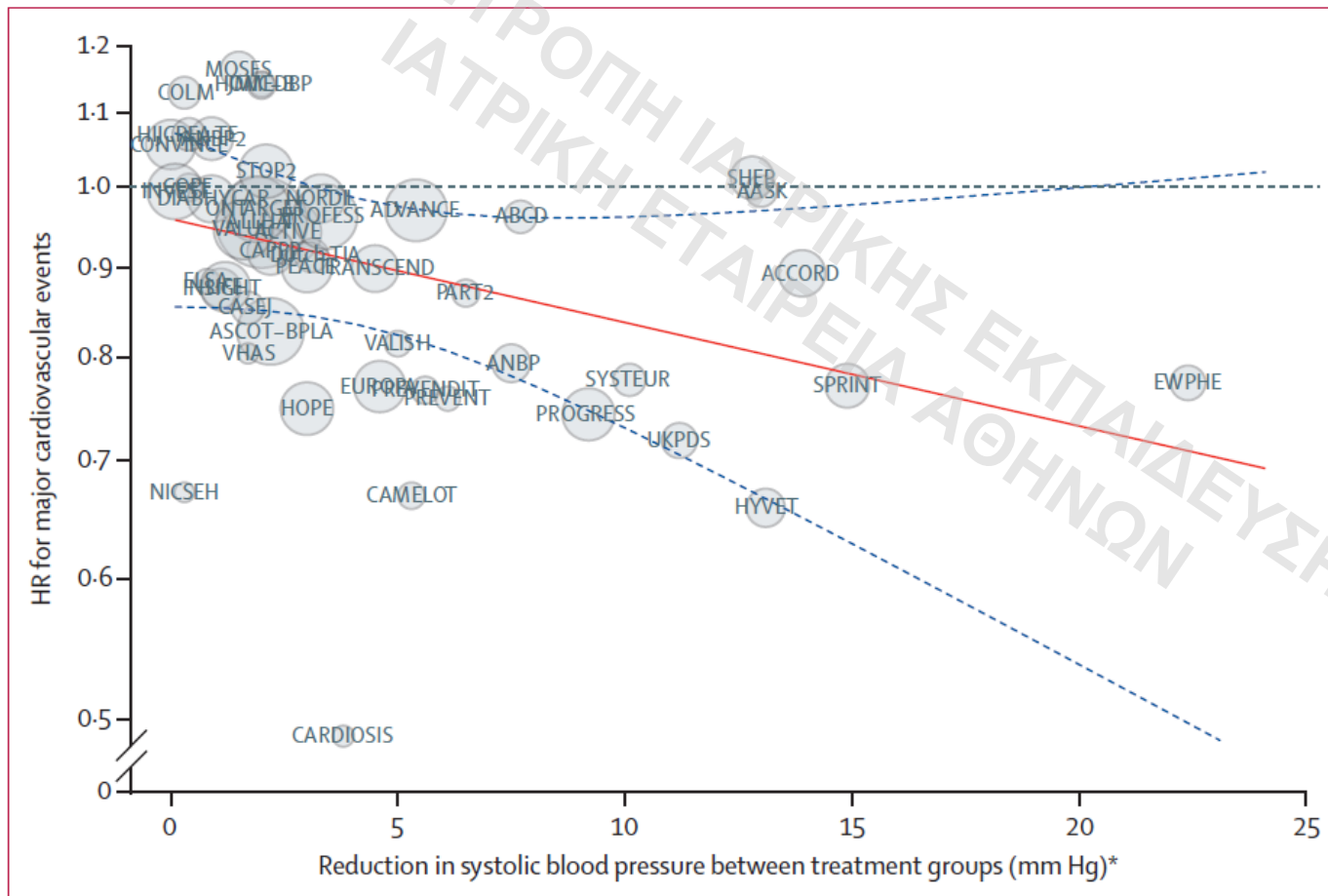


# Pharmacological blood pressure lowering for primary and secondary prevention of cardiovascular disease across different levels of blood pressure: an individual participant-level data meta-analysis



Lancet 2021; 397: 1625-36

The Blood Pressure Lowering Treatment Trialists' Collaboration\*



## A SPHYGMOMANOMETER FOR EPIDEMIOLOGISTS

G. A. ROSE

M.A., D.M. Oxon., M.R.C.P.

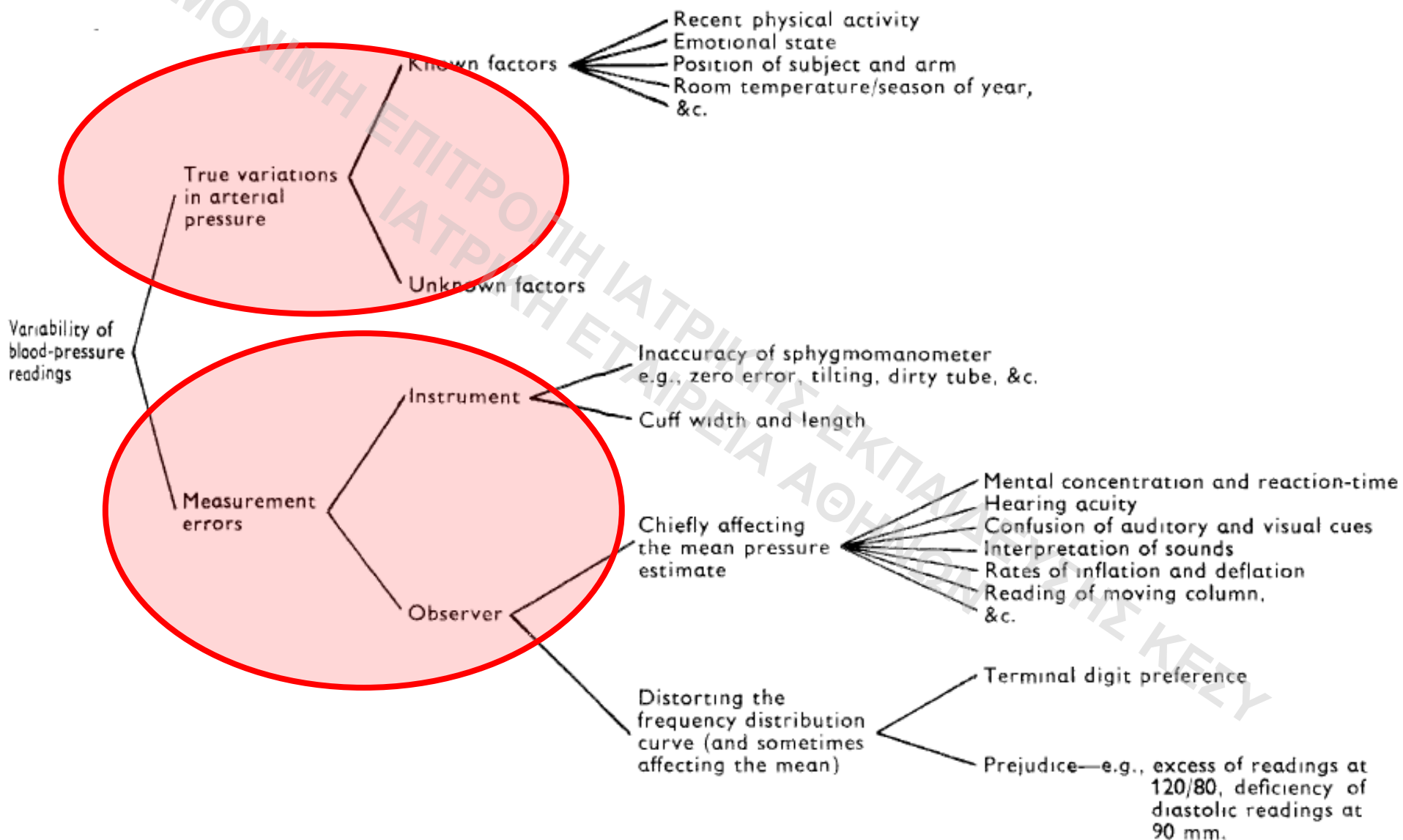


Fig. 1—A schematic representation of some sources of variation in measuring blood-pressure.



# 2021 European Society of Hypertension practice guidelines for office and out-of-office blood pressure measurement

**J Hypertens 2021**

George S. Stergiou<sup>a</sup>, Paolo Palatini<sup>b</sup>, Gianfranco Parati<sup>c,d</sup>, Eoin O'Brien<sup>e</sup>, Andrzej Januszewicz<sup>f</sup>, Empar Lurbe<sup>g,h</sup>, Alexandre Persu<sup>i</sup>, Giuseppe Mancia<sup>j</sup>, Reinhold Kreutz<sup>k</sup>, on behalf of the European Society of Hypertension Council and the European Society of Hypertension Working Group on Blood Pressure Monitoring and Cardiovascular Variability

ΜΟΝΙΜΗ ΕΛΛΗΝΙΚΗ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ



**NO SMOKING,  
CAFFEINE, FOOD,  
EXERCISE 30MIN  
BEFORE**



**QUIET  
ROOM**



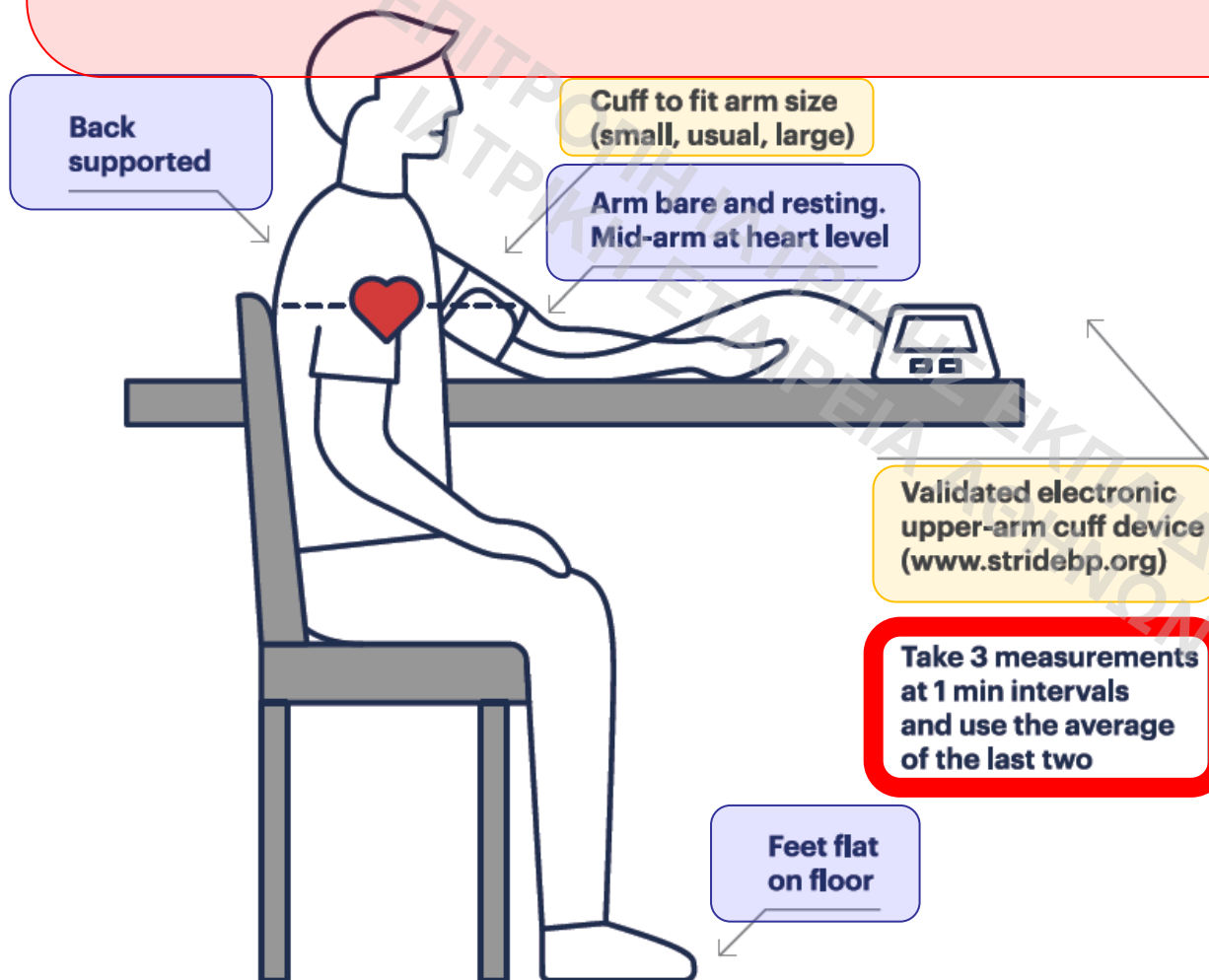
**COMFORTABLE  
TEMPERATURE**



**3-5 MIN  
REST**



**NO TALKING  
DURING OR  
BETWEEN  
MEASUREMENTS**



**Back  
supported**

**Cuff to fit arm size  
(small, usual, large)**

**Arm bare and resting.  
Mid-arm at heart level**

**Validated electronic  
upper-arm cuff device  
([www.stridebp.org](http://www.stridebp.org))**

**Take 3 measurements  
at 1 min intervals  
and use the average  
of the last two**

**Feet flat  
on floor**



ΜΟΝΟ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ



**STRIDE BP**






[www.stridebp.org](http://www.stridebp.org)

**ΠΙΣΤΟΠΟΙΗΜΕΝΕΣ ΣΥΣΚΕΥΕΣ  
ΜΕΤΡΗΣΗΣ ΤΗΣ ΑΡΤΗΡΙΑΚΗΣ ΠΙΕΣΗΣ**

**Ανεξάρτητη - Συστηματική Αξιολόγηση**

ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΤΑΙΡΕΙΑ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ

## Validated blood pressure monitors

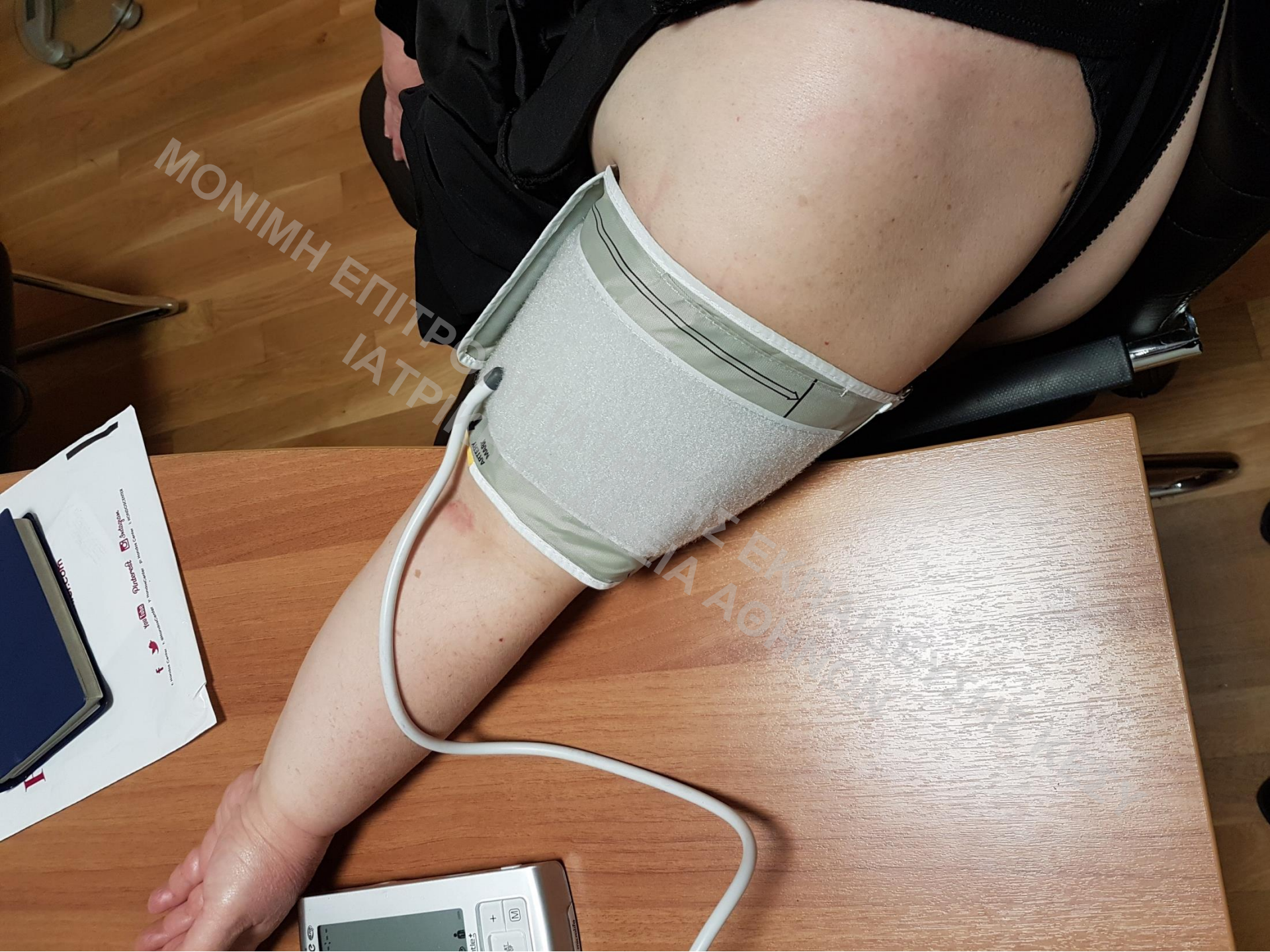
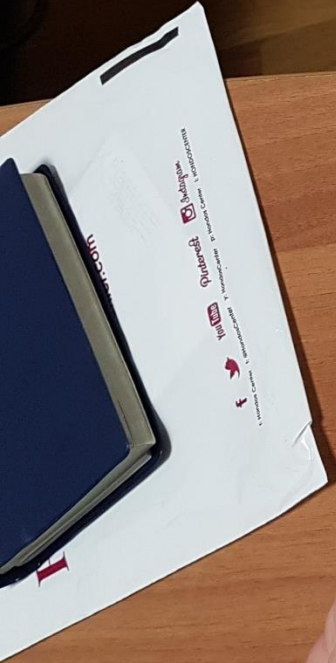
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ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ  
KEY

ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ  
ΙΑΤΡΙΚΩΝ ΕΠΙΧΕΙΡΗΣΕΩΝ



# ΟΡΙΣΜΟΣ ΚΑΙ ΤΑΞΙΝΟΜΗΣΗ ΥΠΕΡΤΑΣΗΣ

**Table 3** Classification of office blood pressure<sup>a</sup> and definitions of hypertension grade<sup>b</sup>

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- ✓ Θεραπεία

# ΕΠΕΙΓΟΥΣΑ-ΥΠΕΡΕΠΕΙΓΟΥΣΑ ΥΠΕΡΤΑΣΗ



**ESC**

European Society  
of Cardiology

European Heart Journal - Cardiovascular Pharmacotherapy (2019) 5, 37–46  
doi:10.1093/ehjcvp/pyy032

**POSITION PAPER**

## ESC Council on hypertension position document on the management of hypertensive emergencies



**ESC**

European Society  
of Cardiology

European Heart Journal (2018) 00, 1–98  
doi:10.1093/eurheartj/ehy339

**ESC/ESH GUIDELINES**





## 2018 ESC/ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the  
European Society of Cardiology (ESC) and the European Society of  
Hypertension (ESH)

## REVIEW ARTICLE OPEN



# Management of hypertensive crisis: British and Irish Hypertension Society Position document

Spoorthy Kulkarni <sup>1</sup>✉, Mark Glover<sup>2</sup>, Vikas Kapil<sup>3,4</sup>, S. M. L. Abrams<sup>5</sup>, Sarah Partridge<sup>6</sup>, Terry McCormack <sup>7</sup>, Peter Sever <sup>8</sup>, Christian Delles <sup>9</sup> and Ian B. Wilkinson<sup>10</sup>

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Patients with hypertensive emergencies, malignant hypertension and acute severe hypertension are managed heterogeneously in clinical practice. Initiating anti-hypertensive therapy and setting BP goal in acute settings requires important considerations which differ slightly across various diagnoses and clinical contexts. This position paper by British and Irish Hypertension Society, aims to provide clinicians a framework for diagnosing, evaluating, and managing patients with hypertensive crisis, based on the critical appraisal of available evidence and expert opinion.

*Journal of Human Hypertension*; <https://doi.org/10.1038/s41371-022-00776-9>

# ΟΡΙΣΜΟΙ

## ΥΠΕΡΕΠΕΙΓΟΥΣΑ ΥΠΕΡΤΑΣΗ (Hypertension Emergency)

- ΣΟΒΑΡΗ ΥΠΕΡΤΑΣΗ (Βαθμού 3)
- ΟΞΕΙΑ ΒΛΑΒΗ ΟΡΓΑΝΟΥ ΣΤΟΧΟΥ
- ΑΠΕΙΛΗΤΙΚΗ ΓΙΑ ΖΩΗ
- ΑΜΕΣΗ ΘΕΡΑΠΕΙΑ (IV)

# ΟΡΙΣΜΟΙ

## ΕΠΕΙΓΟΥΣΑ ΥΠΕΡΤΑΣΗ (Hypertension Urgency)

- ΣΟΒΑΡΗ ΥΠΕΡΤΑΣΗ (Βαθμού 3)
- **ΟΧΙ** ΟΞΕΙΑ ΒΛΑΒΗ ΟΡΓΑΝΟΥ ΣΤΟΧΟΥ
- **ΟΧΙ** ΑΝΑΓΚΗ ΕΙΣΑΓΩΓΗΣ
- ΘΕΡΑΠΕΙΑ ΑΠΟ ΤΟΥ ΣΤΟΜΑΤΟΣ



# ΥΠΕΡΤΑΣΙΚΗ ΑΙΧΜΗ-ΚΡΙΣΗ

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ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ

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## Hypertensive Urgencies and Emergencies

### Prevalence and Clinical Presentation

Bruno Zampaglione, Claudio Pascale, Marco Marchisio, and Paolo Cavallo-Perin

Originally published 1 Jan 1996 | <https://doi.org/10.1161/01.HYP.27.1.144> | Hypertension. 1996;27:144-147

14.209



449 with  
DBP  $\geq$ 120  
mmHg (3%)

449



108 with HTN  
emergency  
(24%)

Signs and Symptoms	Urgencies, %	Emergencies, %	P
Headache	22.0	3.0	<.001
Epistaxis	17.0	0.0	<.001
Chest pain	9.0	27.0	<.005
Dyspnea	9.0	22.0	<.02
Faintness	10.0	10.0	NS
Psychomotor agitation	10.0	0.0	<.004
Neurological deficit	3.0	21.0	<.001
Vertigo	7.0	3.0	NS
Paresthesia	6.0	8.0	NS
Vomitus	2.0	3.0	NS
Arrhythmia	6.0	0.0	<.04

Table 3. Types of End-Organ Damage Associated With Hypertensive Emergencies

End-Organ Damage Type	No. of Cases (%)
Cerebral infarction	26 (24.5)
Intracerebral or subarachnoid hemorrhage	5 (4.5)
Hypertensive encephalopathy	18 (16.3)
Acute pulmonary edema	24 (22.5)
Acute congestive heart failure	15 (14.3)
Acute myocardial infarction or unstable angina pectoris	13 (12.0)
Eclampsia	5 (4.5)
Aortic dissection	2 (2.0)

# Ethnic disparities in the incidence, presentation and complications of malignant hypertension

Bert-Jan H. van den Born<sup>a</sup>, Richard P. Koopmans<sup>a,b</sup>, Johan O. Groeneveld<sup>c</sup> and Gert A. van Montfrans<sup>a</sup>

**Table 1 Clinical characteristics of all included patients according to their ethnic background defined as black versus white**

Patient characteristics	Black	White	<i>P</i> value
Patients	57 (47%)	65 (53%)	
Age, years (mean, SD)	42 ± 10	45 ± 14	0.23
Male	41 (72%)	40 (62%)	0.31
Retinopathy (grade IV)	28 (49%)	32 (49%)	0.86
Systolic blood pressure (mmHg) (mean ± SD)	234 ± 23	225 ± 22	0.03
Diastolic blood pressure (mmHg) (mean ± SD)	148 ± 16	143 ± 16	0.11
Current smoker <sup>a</sup>	16 (28%)	31 (48%)	0.04
Diabetes mellitus	4 (7%)	6 (9%)	0.75
Previous hypertension	32 (56%)	39 (60%)	0.80
Antihypertensive drugs ≥ 1	22 (39%)	23 (35%)	0.86
Stopped taking antihypertensive drugs	18 (32%)	10 (15%)	0.06
No medical insurance	14 (25%)	1 (2%)	< 0.01
Left ventricular hypertrophy	51 (90%)	50 (77%)	0.11

**Table 2 Probable secondary causes of malignant hypertension according to ethnic background (black versus white)**

Probable cause	Black	White	<i>P</i> value
No cause identified	51 (90%)	39 (60%)	< 0.01
Renal parenchymal disease	2 (4%)	12 (19%)	0.02
Renal artery stenosis	1 (2%)	7 (11%)	0.07
Other <sup>a</sup>	3 (5%)	7 (11%)	0.33

<sup>a</sup>Other includes licorice abuse (four), corticoid excess (three), cocaine (two), oral contraceptives (one).

# Acute BP increase (>180/110)



**Absence of organ damage**



**Presence of organ damage**

Author	N	CV risk/ year (approximated)
Vlcek M, 2008	384	6 %
Merlo C, 2012	50	6 %
Patel KK, 2016	58.535	1,8 %
Guiga H, 2017	285	8,9%

Author	N	CV risk/ year (approximated)
Keith NM, 1939	200	78%
Guiga H, 2017	385	39%

Home > Hypertension > Vol. 73, No. 1 > Thirty-Day Readmissions After Hospitalization for Hypertensive Emergency

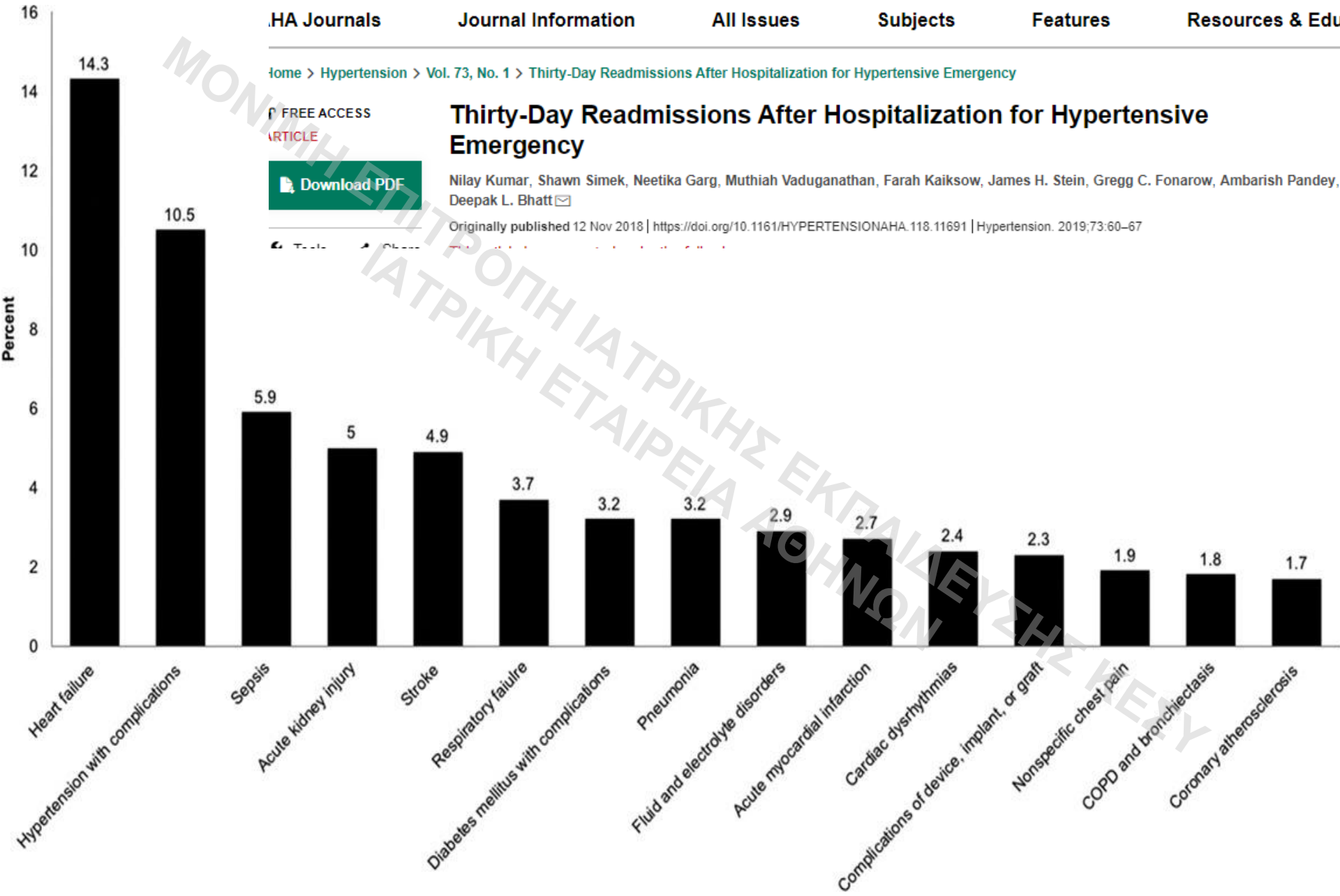
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## Thirty-Day Readmissions After Hospitalization for Hypertensive Emergency

Nilay Kumar, Shawn Simek, Neetika Garg, Muthiah Vaduganathan, Farah Kaiksow, James H. Stein, Gregg C. Fonarow, Ambarish Pandey, Deepak L. Bhatt

Originally published 12 Nov 2018 | <https://doi.org/10.1161/HYPERTENSIONAHA.118.11691> | Hypertension. 2019;73:60–67





# ΥΠΕΡΤΑΣΙΚΗ ΑΙΧΜΗ-ΚΡΙΣΗ

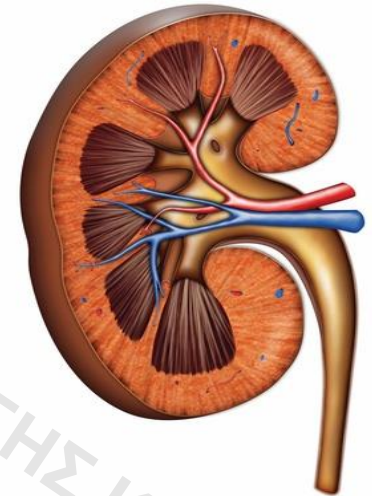
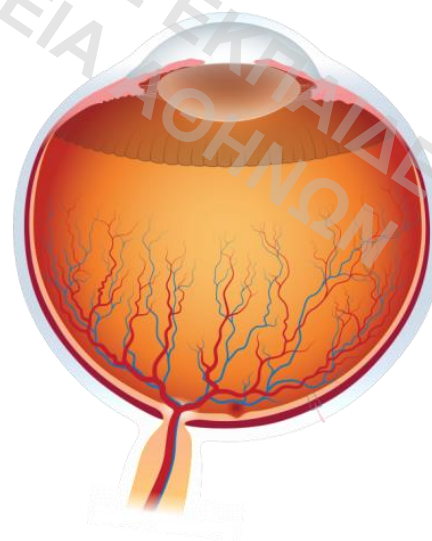
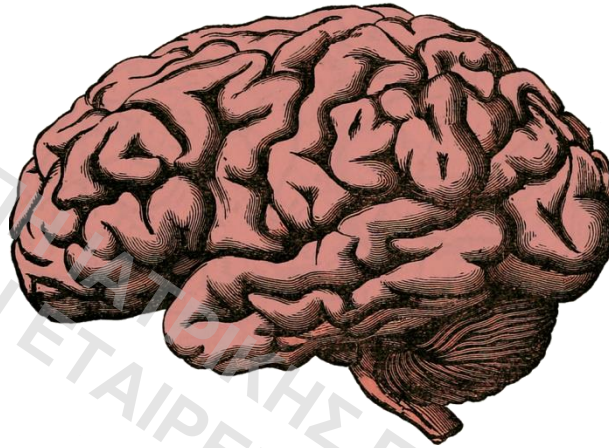
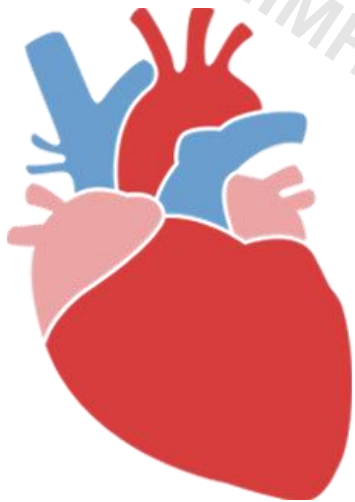
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ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ

# ΔΙΑΓΝΩΣΤΙΚΟΣ ΑΛΓΟΡΙΘΜΟΣ

- Ιστορικό και παρούσα νόσος
- Σχολαστική μέτρηση ΑΠ
- Αξιολόγηση κατάστασης οργάνων-στόχων

# ΟΡΓΑΝΑ-ΣΤΟΧΟΙ ΥΠΕΡΕΠΕΙΓΟΥΣΑ ΥΠΕΡΤΑΣΗ



ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΕΛΛΗΝΙΚΗΣ ΕΠΙΧΕΙΡΗΣΙΑΣ ΕΠΙΧΕΙΡΗΣΗΣ ΚΕΣΥ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΙΩΑΝΝΙΝΩΝ

# ΦΑΙΝΟΤΥΠΟΙ

## ΥΠΕΡΕΠΕΙΓΟΥΣΑΣ ΥΠΕΡΤΑΣΗΣ

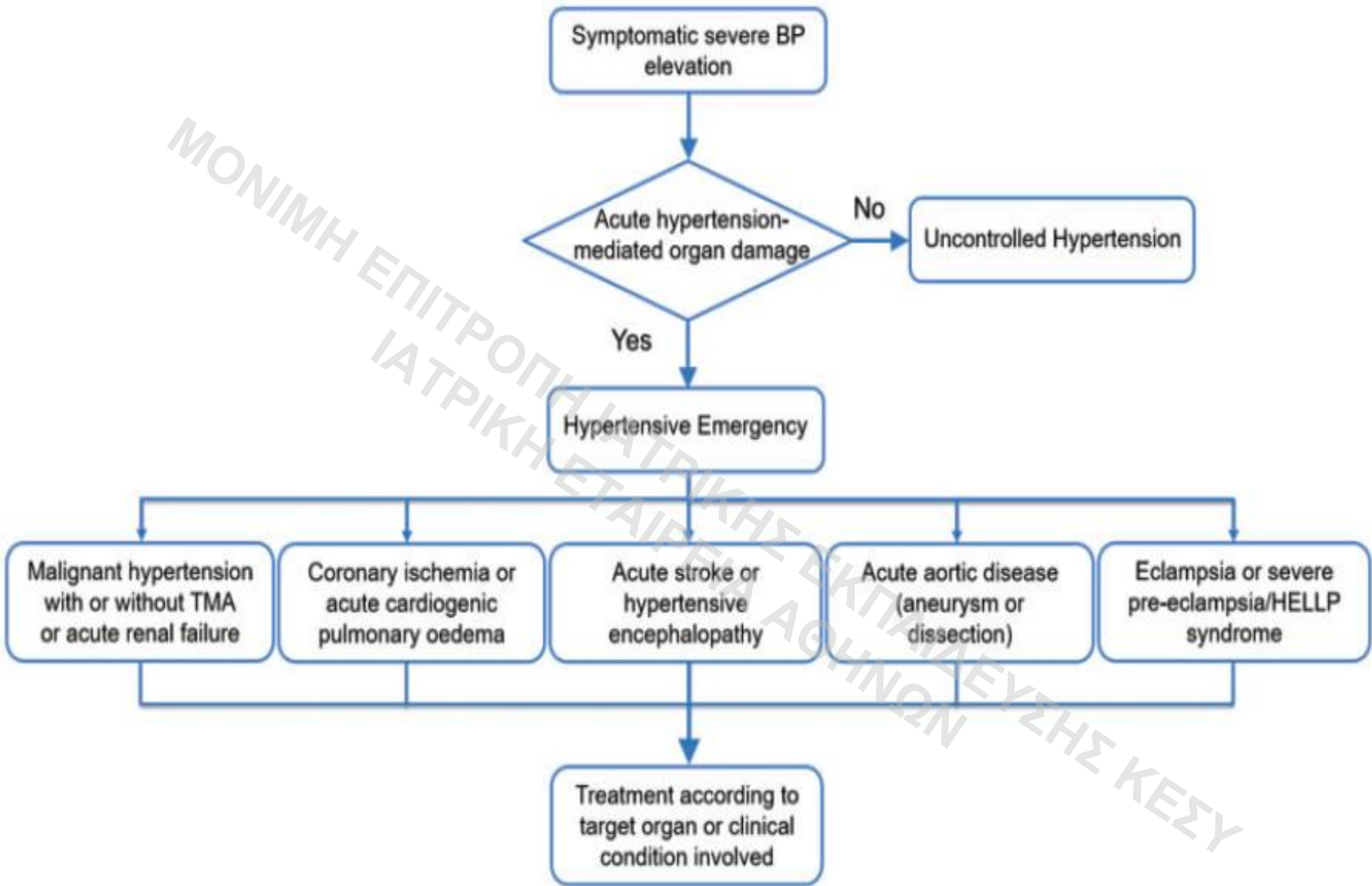
■ ΚΑΚΟΗΘΗΣ ΥΠΕΡΤΑΣΗ (ΑΛΛΟΙΩΣΕΙΣ ΒΥΘΟΥ, ΜΙΚΡΟΑΓΓΕΙΟΠΑΘΕΙΑ-DIC

± ΕΓΚΕΦΑΛΟΠΑΘΕΙΑ, ΟΞΕΙΑ ΚΑΡΔΙΑΚΗ ΑΝΕΠΑΡΚΕΙΑ, ΟΞΕΙΑ ΝΕΦΡΙΚΗ ΒΛΑΒΗ

■  $\geq 180/110$  mmHg + ΟΞΥ ΕΜΦΡΑΓΜΑ ΜΥΟΚΑΡΔΙΟΥ, ΟΞΕΙΑ ΚΑΡΔΙΑΚΗ ΑΝΕΠΑΡΚΕΙΑ (ΟΠΟ), ΑΕΕ\*, ΔΙΑΧΩΡΙΣΤΙΚΟ ΑΝΕΥΡΥΣΜΑ ΑΟΡΤΗΣ

■ ΦΑΙΟΧΡΩΜΟΚΥΤΤΩΜΑ

■ (ΠΡΟ)ΕΚΛΑΜΨΙΑ



**Table 30** Diagnostic workup for patients with a suspected hypertension emergency

Common tests for all potential causes
Fundoscopy is a critical part of the diagnostic workup
12-lead ECG
Haemoglobin, platelet count, fibrinogen
Creatinine, eGFR, electrolytes, LDH, haptoglobin
Urine albumin:creatinine ratio, urine microscopy for red cells, leucocytes, casts
Pregnancy test in women of child-bearing age
Specific tests by indication
Troponin, CK-MB (in suspected cardiac involvement, e.g. acute chest pain or acute heart failure) and NT-proBNP
Chest X-ray (fluid overload)
Echocardiography (aortic dissection, heart failure, or ischaemia)
CT angiography of thorax and/or abdomen in suspected acute aortic disease (e.g. aortic dissection)
CT or MRI brain (nervous system involvement)
Renal ultrasound (renal impairment or suspected renal artery stenosis)
Urine drug screen (suspected methamphetamine or cocaine use)

# Patient evaluation

**All patients  
(N = 1588)**

Blood pressure, median (IQR), mm Hg	
Qualifying SBP	200 (186, 220)
Qualifying DBP	110 (93, 123)
Qualifying MAP	138 (127, 153)
Peak SBP during IV therapy	200 (182, 220)
Peak DBP during IV therapy	107 (93, 122)
Laboratory values, median (IQR)	
Initial creatinine (mg/dL)	1.2 (0.9, 2.3)
Peak creatinine (mg/dL)	1.4 (1.0, 2.7)
Initial potassium (mEq/L)	4.0 (3.6, 4.5)
Urinalysis, n (%)	
Hematuria	438 (44)
Proteinuria	492 (49)
Ancillary studies and procedures, n (%)	
Funduscopic examination	208 (13)
Chest x-ray	1374 (87)
Electrocardiogram	1427 (90)
TTE	719 (45)
Head CT	747 (47)
Arterial line	392 (25)
Mechanical ventilation	287 (18)
Dialysis	150 (9.5)
Intracranial surgery	108 (6.8)
ICU admission	766 (48)

## STAT registry

(Studying The Treatment of Acute hyperTension)

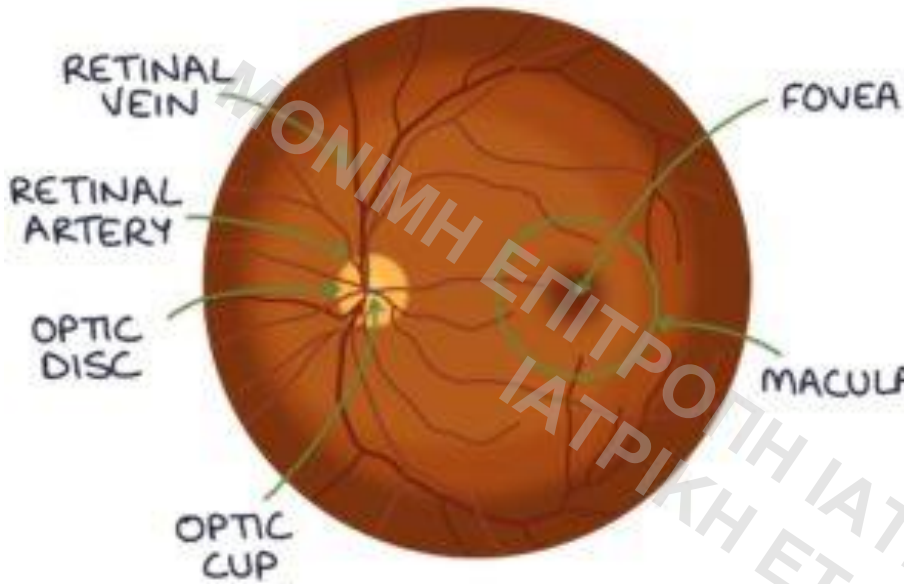
1,588 patients from 25 sites

Median age 58 years

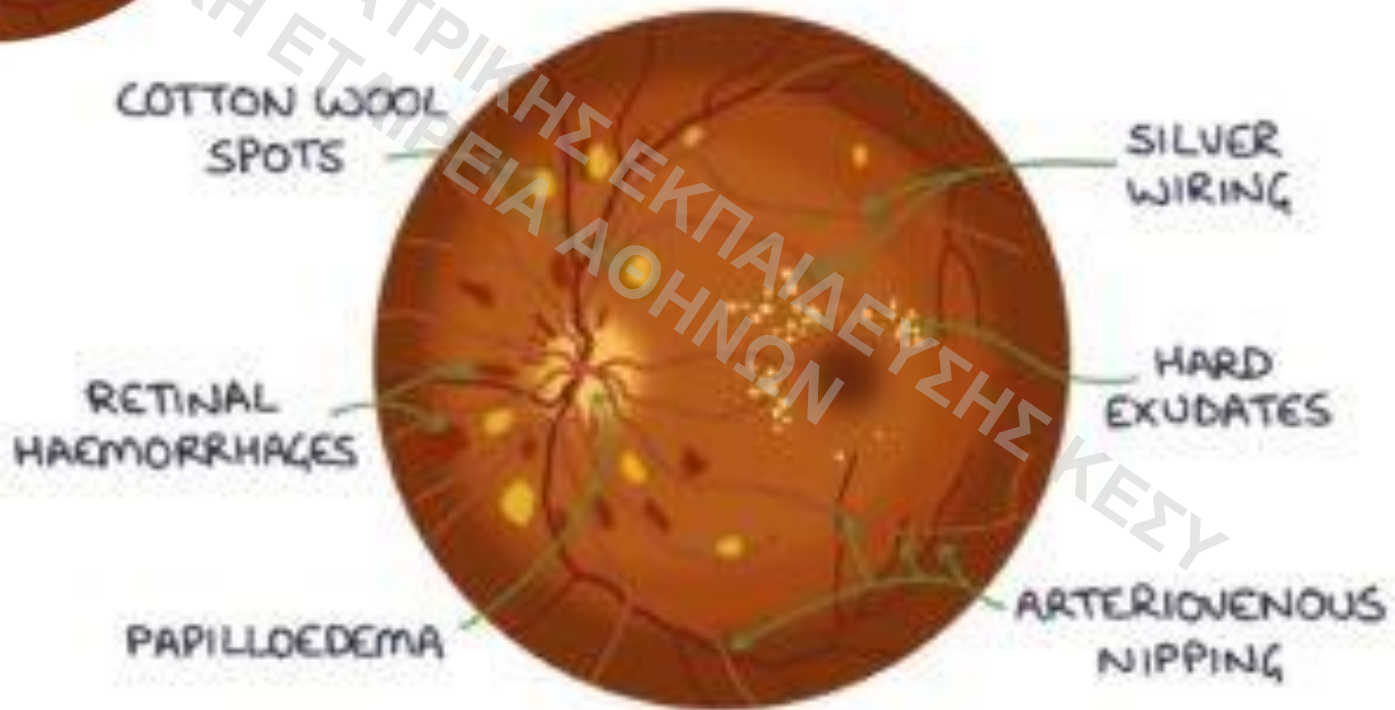
49% women

56% African-American

NORMAL FUNDUS



PERTENSIVE RETINOPATHY





# Papilloedema

Healthy Retina



Papilloedema

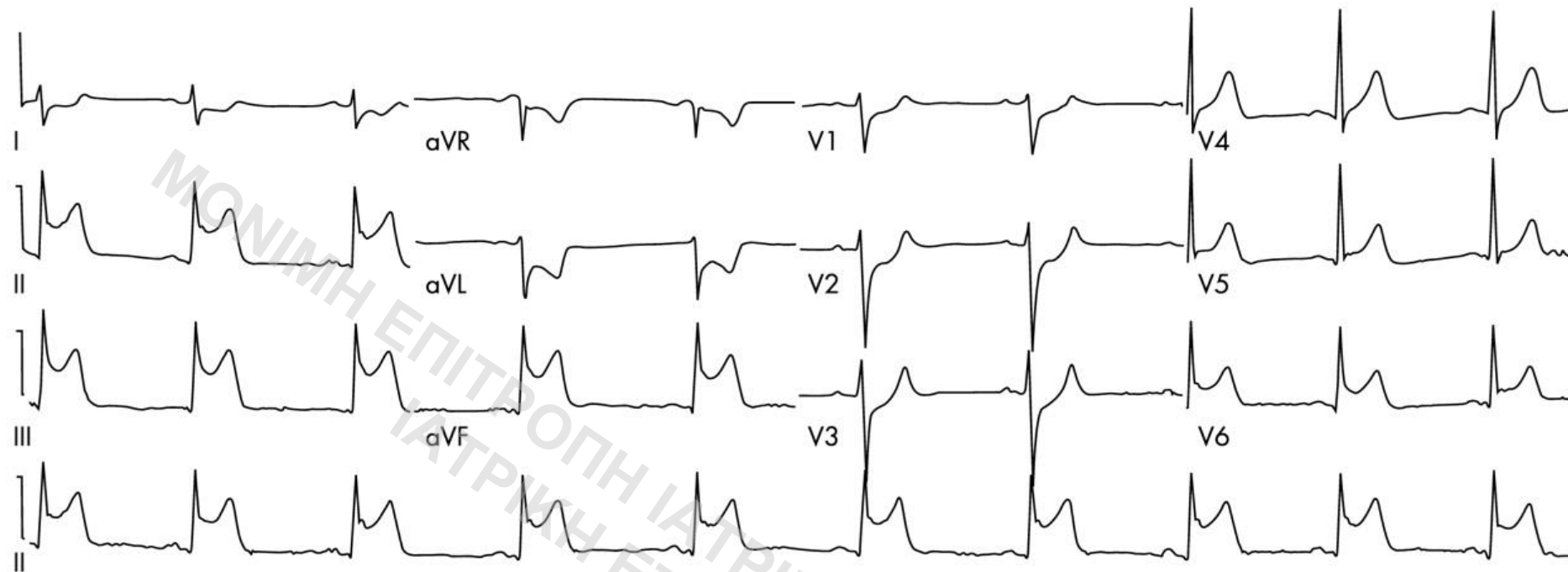


- Bulging disc
- Haemorrhages close to the edge of the disc
- Blurring of the "optic margin" (the edge of the disc)
- Venous engorgement

ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ



A



B



R

AP

ERECT

ΜΟΝΙΜΗ ΕΠΙΤΡΟΠΗ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ ΕΤΑΙΡΙΑΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΑΘΗΝΩΝ



Fig. 4a

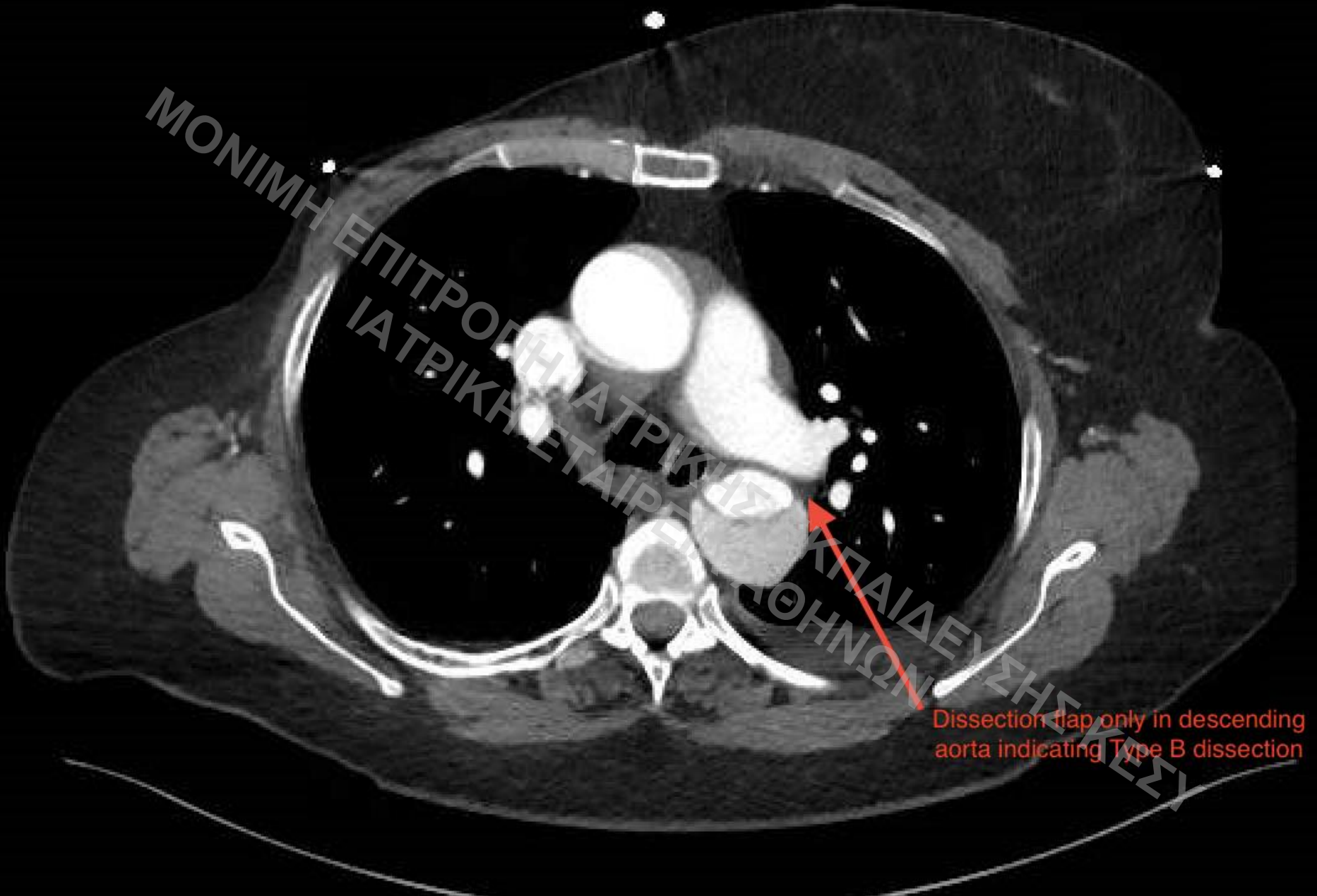


Fig. 4b



ΜΟΝΟΜΕΤΕΧΝΙΚΗ ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ ΕΤΑΙΡΕΙΑ ΑΘΗΝΩΝ

ΜΟΝΙΜΗ ΕΠΙΤΡΟΦΗ ΙΑΤΡΙΚΗΣ ΚΑΤΑΡΤΙΣΗΣ ΚΑΙ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΝΤΡΟΝ



Dissection flap only in descending aorta indicating Type B dissection

# ΠΕΡΙΠΤΩΣΗ 1

- Γυναίκα 63 ετών παχύσαρκη, με ιστορικό υπέρτασης υπό αγωγή
- Προέρχεται στο Τ.Ε.Π. λόγω κεφαλαλγίας και ρινορραγίας
- Από την κλινική εξέταση ΑΠ 210/113 mmHg, 89 bpm, Sat 99%
- ECG, stick ούρων (-), γεν αίματος, Ur, Cr κφ

# ΠΕΡΙΠΤΩΣΗ 2

ΜΟΝΙΜΗ ΕΡΓΑΣΙΑ  
ΙΑΤΡΙΚΗΣ ΕΚΠΑΙΔΕΥΣΗΣ ΚΕΣΥ  
ΑΘΗΝΩΝ  
ΕΛΛΗΝΙΚΗ ΙΑΤΡΙΚΗ ΕΤΑΙΡΕΙΑ

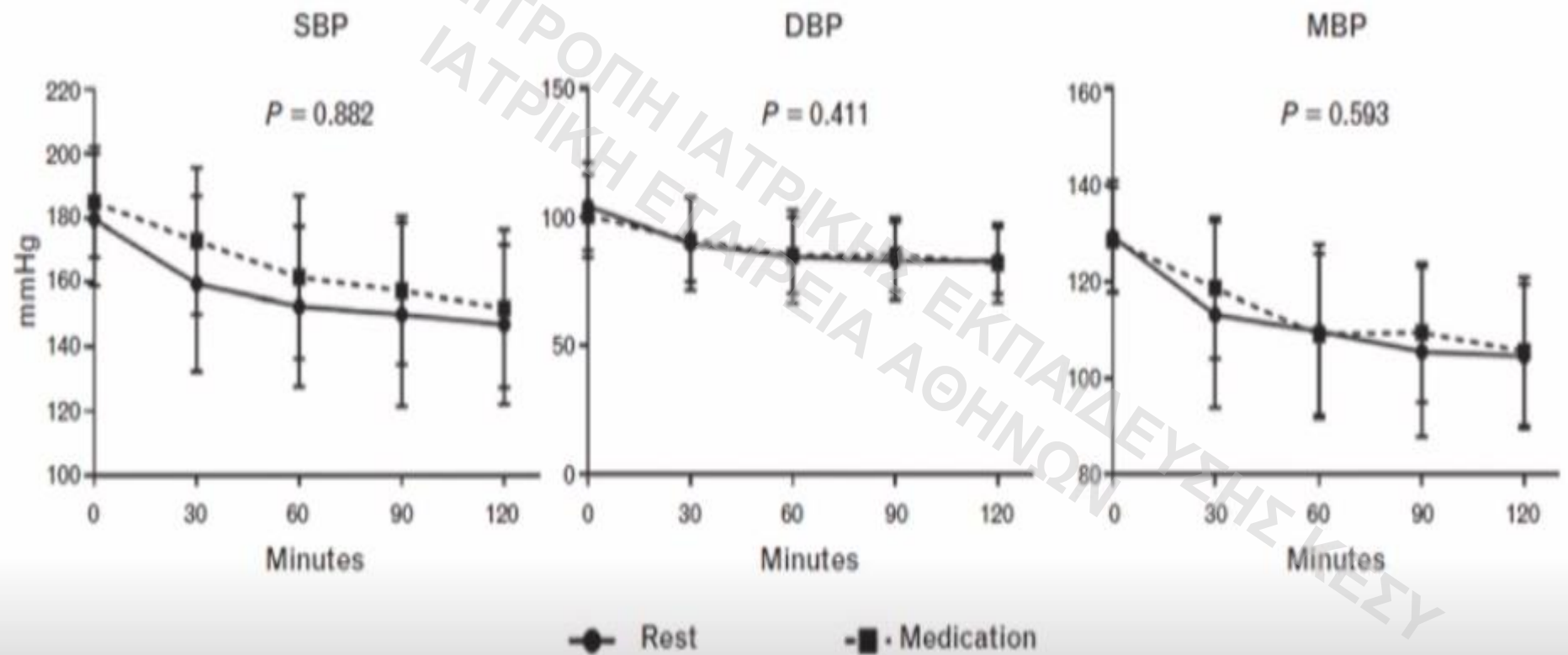
- Άνδρας 67 ετών με ΣΔ και υπέρταση προσέρχεται στο Τ.Ε.Π. λόγω δύσπνοιας από ωρών
- ΑΠ 206/102 mmHg-104 bpm
- Αρρυθμία
- Ταχύπνοια - Sat 92% - μη μουσικοί ρόγχοι σε βάσεις πνευμονικών πεδίων
- ECG: AF, Α/α θώρακος: ↑ ΚΘΔ-συμφόρηση πύλες, τροπονίνη οριακά ↑



# ΥΠΕΡΤΑΣΙΚΗ ΑΙΧΜΗ-ΚΡΙΣΗ

- ✓ Μεθοδολογία μέτρησης ΑΠ
- ✓ Ορισμοί
- ✓ Επιδημιολογία
- ✓ Διαγνωστικός Αλγόριθμος
- ✓ Θεραπεία

# Comparing the clinical efficacy of resting and antihypertensivemedication in patients of hypertensive urgency: a randomized, control trial





# 2018 ESC/ESH Guidelines for the management of arterial hypertension

**The Task Force for the management of arterial hypertension of the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH)**

The term ‘hypertension urgency’ has also been used to describe severe hypertension in patients presenting to the emergency department in whom there is no clinical evidence of acute HMOD.<sup>405</sup>

Whilst these patients require BP reduction, they do not usually require admission to hospital, and BP reduction is best achieved with oral medication according to the drug treatment algorithm presented in *Figure 4*. However, these patients will require urgent outpatient review to ensure that their BP is coming under control.



# ESC Council on hypertension position document on the management of hypertensive emergencies

nor BP control after 6 months.<sup>8</sup> Because, there is no evidence that treatment in patients who lack acute hypertension-mediated organ damage is different from patients with asymptomatic uncontrolled hypertension, the Task Force considers that it is preferable not to use the term ‘hypertensive urgency’ and only use hypertensive emergency to refer to those situations where immediate treatment is warranted. This also means that the term hypertensive crisis that was

1 Pill

Initial therapy  
Dual combination

ACEi or ARB + CCB or diuretic

Consider monotherapy in  
low risk grade 1 hypertension  
(systolic BP <150mmHg), or in  
very old ( $\geq 80$  years) or frailer patients

1 Pill

Step 2  
Triple combination

ACEi or ARB + CCB + diuretic

2 Pills

Step 3  
Triple combination +  
spironolactone or  
other drug

**Resistant hypertension**  
Add spironolactone (25-50 mg o.d.)  
or other diuretic, alpha-blocker or beta-blocker

Consider referral to a specialist centre  
for further investigation

### Beta-blockers

Consider beta-blockers at any treatment step, when there is a specific indication for their use, e.g. heart failure, angina, post-MI, atrial fibrillation, or younger women with, or planning, pregnancy

# Time to decrease reach blood pressure targets

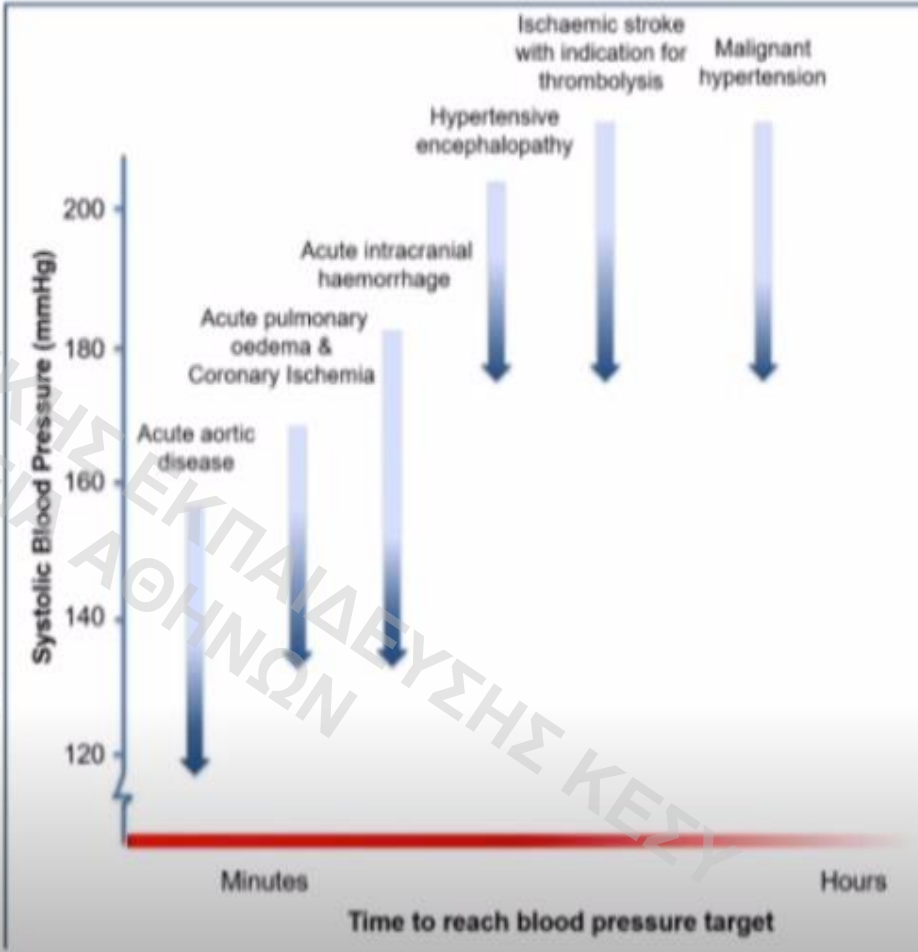
## Acute HT mediated organ damage

Aorta – dissection, aneurysm

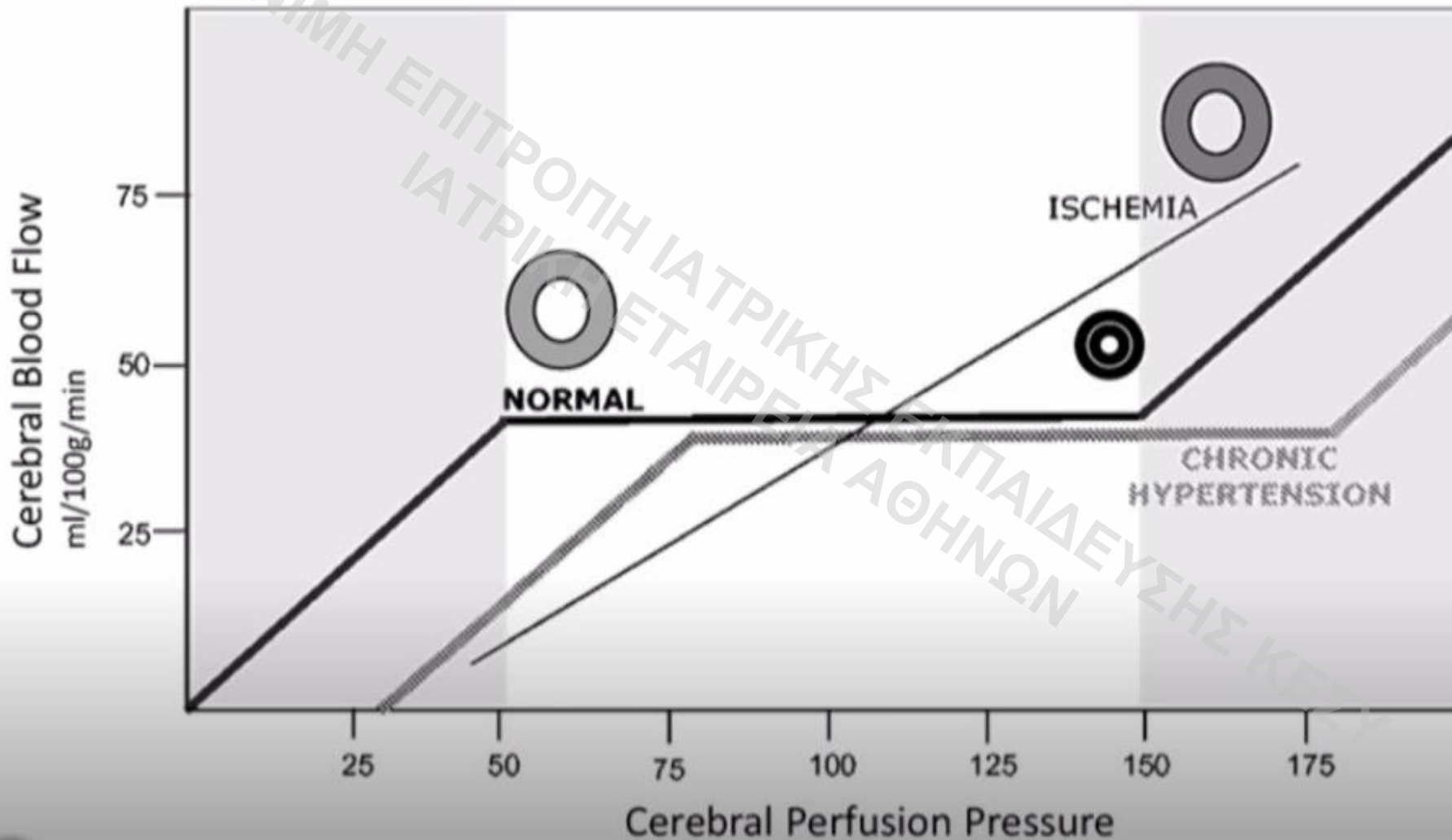
Heart – MACE, acute pulmonary oedema

Brain – stroke, HT encephalopathy

Retina & Kidneys – malignant hypertension



# Relationship between cerebral perfusion pressure and cerebral blood flow



**Table 3** Hypertensive emergencies requiring immediate BP lowering

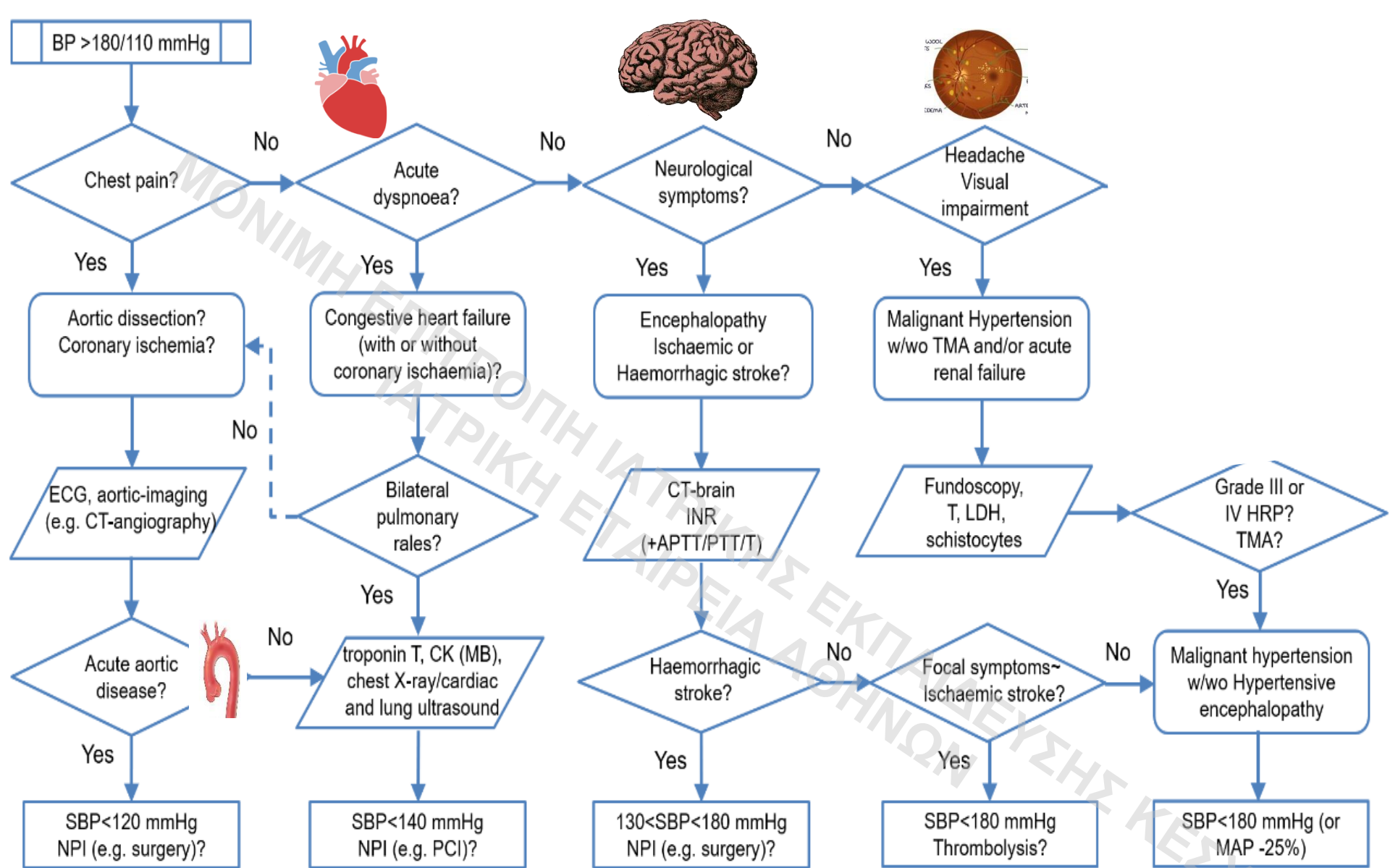
Clinical presentation	Time line and target BP	1st line treatment	Alternative
Malignant hypertension with or without TMA or acute renal failure	Several hours, MAP -20% to -25%	Labetalol Nicardipine	Nitroprusside Urapidil
Hypertensive encephalopathy	Immediate, MAP -20% to -25%	Labetalol Nicardipine	Nitroprusside
Acute ischaemic stroke and BP >220 mmHg systolic or >120 mmHg diastolic	1 h, MAP -15%	Labetalol Nicardipine	Nitroprusside
Acute ischaemic stroke with indication for thrombolytic therapy and BP >185 mmHg systolic or >110 mmHg diastolic	1 h, MAP -15%	Labetalol Nicardipine	Nitroprusside
Acute haemorrhagic stroke and systolic BP >180 mmHg	Immediate, systolic BP 130 < BP <180 mmHg	Labetalol Nicardipine	Urapidil
Acute coronary event	Immediate, systolic BP <140 mmHg	Nitroglycerine Labetalol	Urapidil
Acute cardiogenic pulmonary oedema	Immediate, systolic BP <140 mmHg	Nitroprusside or Nitroglycerine (with loop diuretic)	Urapidil (with loop diuretic)
Acute aortic disease	Immediate, systolic BP <120 mmHg and heart rate <60 b.p.m.	Esmolol and Nitroprusside or Nitroglycerine or Nicardipine	Labetalol or Metoprolol
Eclampsia and severe pre-eclampsia/HELLP	Immediate, systolic BP <160 mmHg and diastolic BP <105 mmHg	Labetalol or Nicardipine and Magnesium sulphate	

BP, blood pressure; HELLP, haemolysis, elevated liver enzymes and low platelets; TMA, thrombotic microangiopathy.



**Table 4 Intravenous drugs for the treatment of hypertensive emergencies**

Drug	Onset of action	Duration of action	Dose	Contraindications	Adverse effects
Esmolol	1–2 min	10–30 min	0.5–1 mg/kg i.v. bolus; 50–300 µg/kg/min as continuous i.v. infusion	History of 2nd or 3rd degree AV block (and in the absence of rhythm support), systolic heart failure, asthma, and bradycardia	Bradycardia
Metoprolol	1–2 min	5–8 h	2.5–5 mg i.v. bolus over 2 minutes; may repeat every 5 minutes to a maximum dose of 15 mg	History of 2nd or 3rd degree AV block, systolic heart failure, asthma, and bradycardia	Bradycardia
Labetalol	5–10 min	3–6 h	0.25–0.5 mg/kg i.v. bolus; 2–4 mg/min continuous infusion until goal BP is reached, thereafter 5–20 mg/h	History of 2nd or 3rd degree AV block, systolic heart failure, asthma, and bradycardia	Bronchoconstriction and foetal bradycardia
Fenoldopam	5–15 min	30–60 min	0.1 µg/kg/min i.v. infusion, increase every 15 min until goal BP is reached with 0.05 to 0.1 µg/kg/min increments		
Clevidipine	2–3 min	5–15 min	2 mg/h i.v. infusion, increase every 2 min with 2 mg/h until goal BP		Headache and reflex-tachycardia
Nicardipine	5–15 min	30–40 min	5–15 mg/h as continuous i.v. infusion, starting dose 5 mg/h, increase every 15–30 min with 2.5 mg until goal BP, thereafter decrease to 3 mg/h	Liver failure	Headache and reflex-tachycardia
Nitroglycerine	1–5 min	3–5 min	5–200 µg/min, 5 µg/min increase every 5 min		Headache and reflex tachycardia
Nitroprusside	Immediate	1–2 min	0.3–10 µg/kg/min, increase by 0.5 µg/kg/min every 5 min until goal BP	Liver/kidney failure (relative)	Cyanide intoxication
Enalaprilat	5–15 min	4–6 h	0.625–1.25 mg i.v.	History of angioedema	
Urapidil	3–5 min	4–6 h	12.5–25 mg i.v. bolus, 5–40 mg/h as continuous infusion		
Clonidine	30 min	4–6 h	150–300 µg i.v. bolus in 5–10 min		Sedation and rebound hypertension
Phentolamine	1–2 min	10–30 min	0.5–1 mg/kg i.v. bolus OR 50–300 µg/kg/min as continuous i.v. infusion		Tachyarrhythmias and chest pain



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- ECG, stick ούρων (-), γεν αίματος, Ur, Cr κφ
- Τιτλοποίηση αντιυπερτασικής αγωγής και επανεκτίμηση

# ΠΕΡΙΠΤΩΣΗ 2

- Άνδρας 67 ετών με ΣΔ και υπέρταση προσέρχεται στο Τ.Ε.Π. λόγω δύσπνοιας από ωρών
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- Αρρυθμία
- Ταχύπνοια - Sat 92% - μη μουσικοί ρόγχοι σε βάσεις πνευμονικών πεδίων
- ECG: AF, Α/α θώρακος: ↑ ΚΘΔ-συμφόρηση πύλες, τροπονίνη οριακά ↑
- Εισαγωγή, νιτρογλυκερίνη κ φουροσεμίδη IV

# ΚΥΡΙΑ ΣΗΜΕΙΑ

- Σοβαρή υπέρταση: ΑΠ  $\geq$  180/110 mmHg
- Η παρουσία οξείας εξελισσόμενης βλάβης σε όργανο-στόχο καθορίζει την αναγκαιότητα άμεσης παρέμβασης
- Το όργανο-στόχος και η προσβολή του καθορίζουν το χρόνο και είδος παρέμβασης