Hipertansif Hastada Endokrinolojik Değerlendirme

Son Rehberler Işığında Diyabetik Hastada HT Tedavisi

Prof. Dr. Erdinç Ertürk
Uludağ Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları Bilim Dalı

Uludağ İç Hastalıkları Günleri
Uludağ, 9 Mart 2015

Hipertansiyon Nedenleri

- Esansiyel Hipertansiyon

- Sekonder Hipertansiyon
  - Endokrin nedenler
  - Renal hastalıklar
  - İlaçlara bağlı nedenler
  - Nörolojik hastalıklar
  - Diğer nadir sebepler

Hipertansiyon nedenleri

Sekonder nedenler

- Endokrin nedenler
- Renal hastalıklar
- İlaçlara bağlı nedenler
- Nörolojik hastalıklar
- Diğer nadir sebepler

- Primer hiperaldosteronizm
- Feokromasitoma
- Cushing sendromu
- Akromegali
- Hipertiroidi
- Hipotiroidi
- Hiperparatiroidi
- Karsinoid tümör
- Konjenital adrenal hiperplazi

Prospective Study on the Prevalence of Secondary Hypertension among Hypertensive Patients Visiting a General Outpatient Clinic in Japan

Table 3. Incidence of Essential and Secondary Hypertension among Hypertensive Patients, in Comparison with Previous Reports

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Primary aldosteronism (%)	6.0	1.5	0.3	0.1	ND
Renovascular hypertension (%)	0.5	3.3	0.7	1.0	0.2
Cushing's syndrome (%)	1.0	0.6	0.1	0.1	0.2
Preclinical Cushing's syndrome (%)	1.0	ND	ND	ND	ND
Pheochromocytoma (%)	0.6	0.3	0.1	0.2	ND
Others (%)	0	0	1.0	0.8	0.4

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Omura M. Hypertens Res, 2004

Endokrin hipertansiyon özellikleri

- Nadir
- Tanı kolay değil

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Tüm hipertansif hastaların araştırılması maliyet etkin değil

Endokrin HT morbidite/mortalite

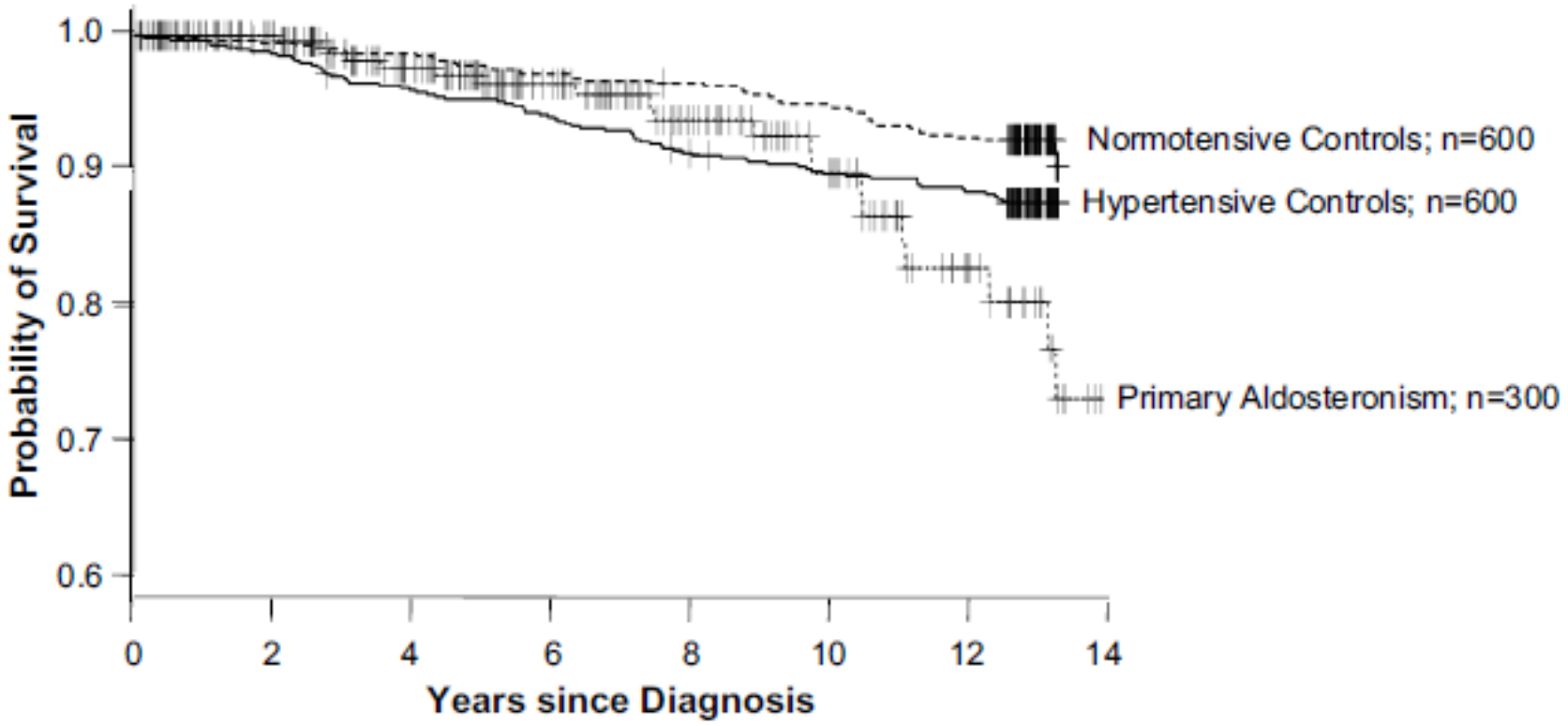
- Primer hiperaldosteronizm
- Feokromasitoma
- Cushing sendromu
- Akromegali
- Hipertiroidi
- Hipotiroidi
- Hiperparatiroidi
- Karsinoid tümör
- Konjenital adrenal hiperplazi

Esansiyel HT ile karşılaştırma

Tüm çalışmalar anlamlı

Observational Study Mortality in Treated Primary Aldosteronism

The German Conn's Registry



Reincke M. Hypertension, 2012

Evidence for an Increased Rate of Cardiovascular Events in Patients With Primary Aldosteronism

Table 3. Rate of Cardiovascular Events and Cardiac Structure in Primary Aldosteronism Patients and Controls

	Primary Aldosteronism (n = 124)	Essential Hypertension (n = 465)	Odds Ratio (95% CI)	p Value
Stroke (%)	12.9	3.4	4.2 (2.0–8.6)	<0.001
Myocardial infarction (%)	4.0	0.6	6.5 (1.5–27.4)	<0.005*
Atrial fibrillation (%)	7.3	0.6	12.1 (3.2–45.2)	<0.0001*
Echocardiographic LVH (%)	34	24	1.6 (1.1–2.5)	<0.01
Electrocardiographic LVH (%)	32	14	2.9 (1.8–4.6)	<0.001

Milliez P. J Am Coll Cardiol, 2012

Endokrin hipertansiyon özellikleri

- Nadir
- Tanı kolay değil

- Antihipertansifler ile kontrolü güç
- Hipertansif komplikasyonlar daha sık

Endokrin hipertansiyon özellikleri

- Nadir
- Tanı kolay değil

- Antihipertansifler ile kontrolü güç
- Hipertansif komplikasyonlar daha sık

Tüm hipertansif hastaların araştırılması maliyet etkin değil

- Primer neden tedavisi yapılmazsa komplikasyon sık
- Küratif sonuç elde edilebilir

Hangi hipertansif hastada Endokrin HT araştırılmalı?

Hangi hipertansif hastada Endokrin HT araştırılmalı?

- Klinik şüphe varsa
  - Anamnez
  - Fizik Muayene
  - Laboratuar

Hipertansif hastanın tedavi öncesi değerlendirmesi

- Tanının doğrulanması
- Risk faktörlerinin değerlendirilmesi
- Sekonder nedenlerin araştırılması

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Endokrin HT tanısında zorluklar

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- Hipertiroidi
- Hipotiroidi
- Hiperparatiroidi
- Karsinoid tümör
- Konjenital adrenal hiperplazi

- Klinik aşikar olmayabilir
- Yavaş seyirli olabilir
- Tanıları kolay değil

- Tanıları kolay
- HT etyolojisinde nadir

Endokrin HT ipuçları

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Anamnez – FM - Lab

Halsizlik
Kas güçsüzlüğü
Parestezi
Poliüri
Polidipsi
Ödem yok

Hipopotasemi
Hipernatremi
Metabolik alkoloz
Hipomagnezemi
U_{Na} azalması

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A Prospective Study of the Prevalence of Primary Aldosteronism in 1,125 Hypertensive Patients

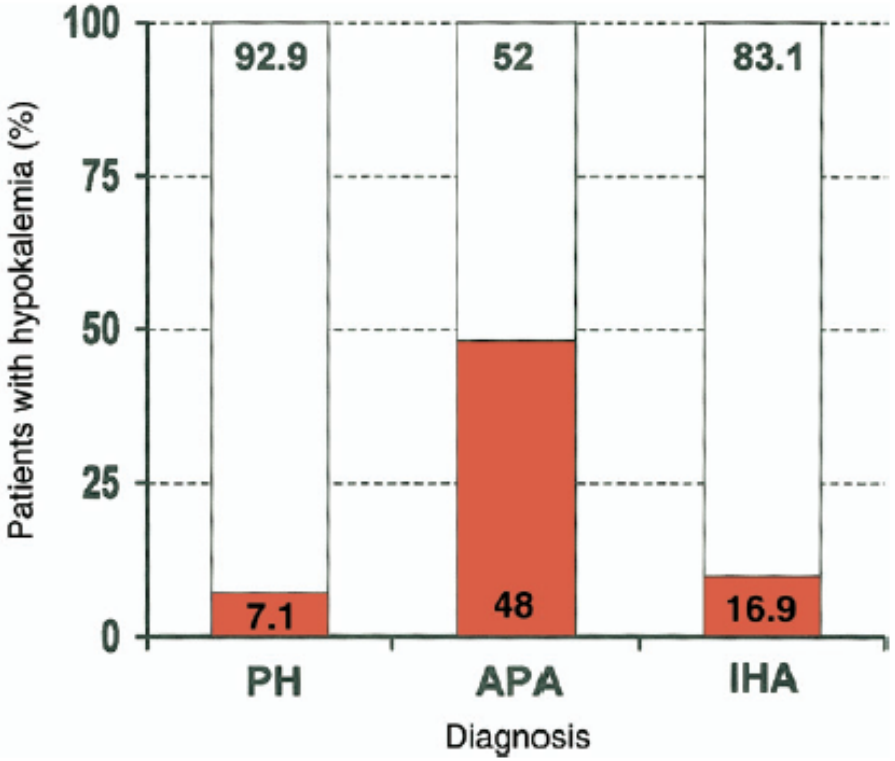
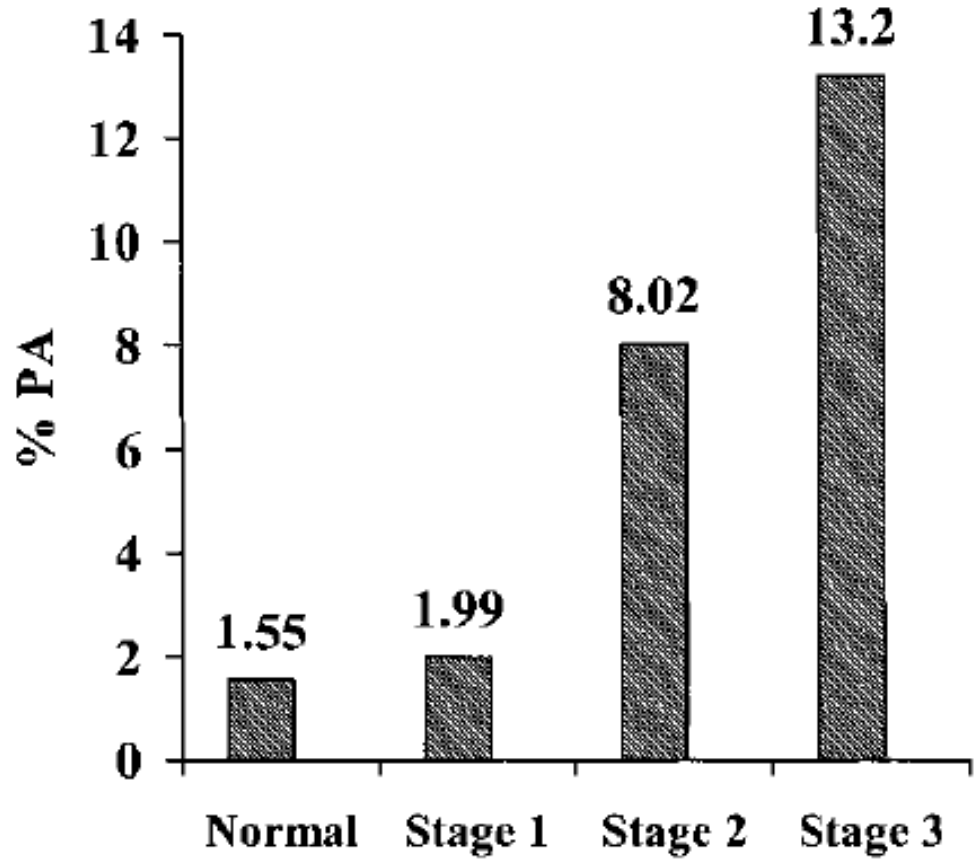


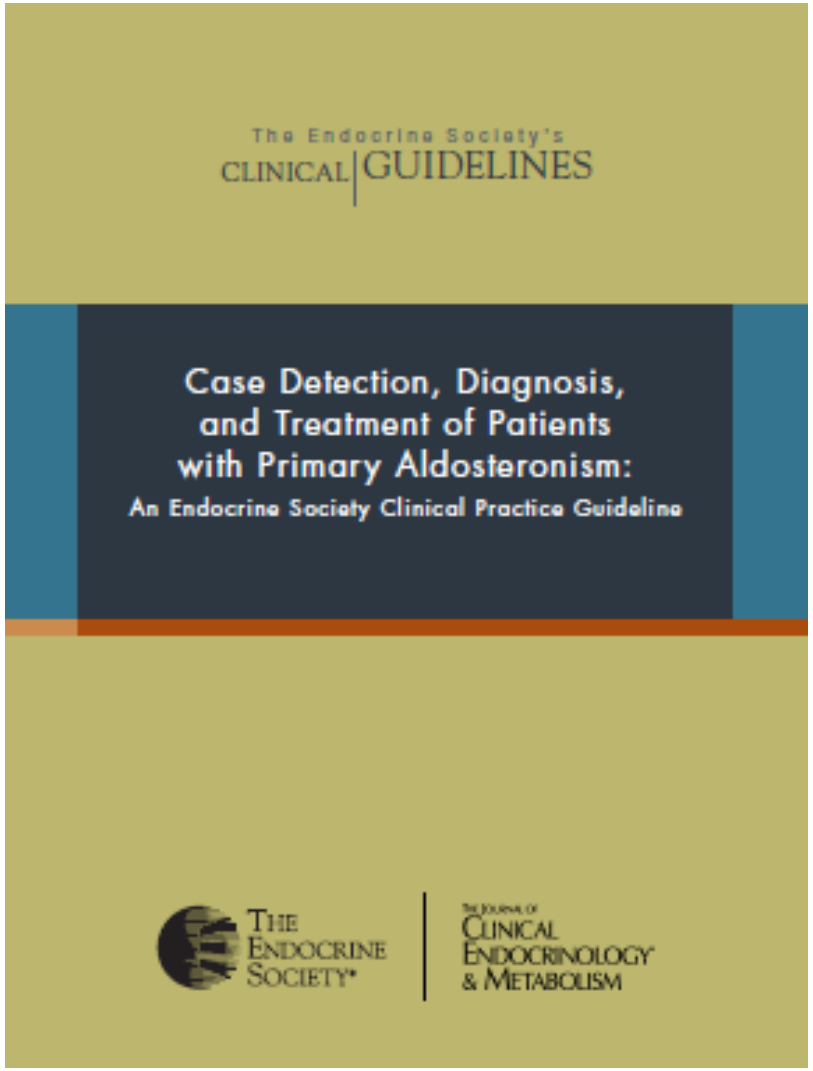
Figure 2. This bar graph shows that a substantial proportion of the patients with APA and IHA did not have hypokalemia **(red bars)** at the time of presentation. APA = aldosterone-producing adenoma; IHA = idiopathic hyperaldosteronism; PH = primary hypertension.

Rossi GP. J Am Coll Cardiol, 2006

Primary Aldosteronism and Hypertensive Disease



Mosso L. Hypertension, 2003



- Hipokalemi
  - Spontan, diüretik ile
- TA > 160/90
- Adrenal İnsidanteloma
- Aile öyküsü
  - Pr. hiperaldosteronizm
  - Erken yaş CVA olay

Primer hiperaldosteronizm tanısal yaklaşım

- Tarama testleri
  - Plazma aldosteron konsantrasyonu
  - Plazma renin aktivitesi
- Tanısal testler
  - Salin infüzyon testi
  - Oral sodyum yükleme
  - Fludrokortizon süpresyon testi
  - Kaptopril süpresyon testi
- Etyolojiye yönelik testler
  - Idyopatik bilateral hiperplazi (60%–70%)
  - Aldosteron salan adenom (30%–35%)
  - Familyal hiperaldosteronizm (<1%)
    - FH tip 1 (glucocorticoid remediable aldosteronizm)
    - FH tip 2 (chromosome 7p22 kromozom mutasyonu)
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Aldosteron / Renin Oranı

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ARR ölçümünde dikkat edilecekler

- Tuz kısıtlı diyet yapmıyor olması
- Spironolakton (aldosteron antagonisti) kullanmıyor olması
- Laboratuarda kan almadan önce 5-10 dakika oturması
- Hipopotasemisi varsa düzeltilmiş olması
- Renal yetmezlik olmaması

Pr. Hiperaldosteronizm tanısında ilk basamak

- Plazma aldosteron konsantrasyonu (ng/dL)
- Plazma renin aktivitesi (ng/mL·h)

ARR > 30

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Omura M. Hypertens Res, 2004

Hipertansif bir hastada Feokromasitoma tanısının önemi

- Kardiyovasküler mortalitesi yüksek
- Kitle etkisi yaratabilir
- Malign olabilir
- MEN komponenti olabilir
  - Medüller ca, hiperparatiroidi
- Familyal olabilir

Endokrin HT ipuçları

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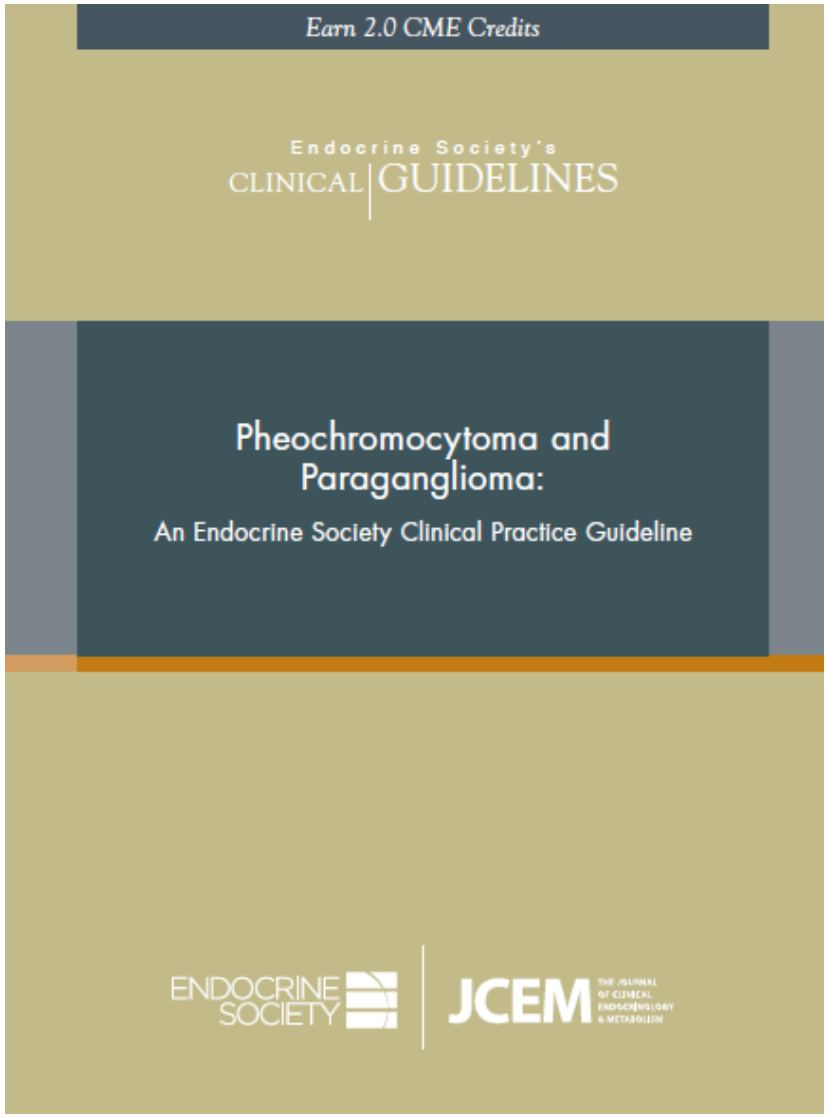
Anamnez – FM - Lab

HT atakları
Kuvvetli kalp atışı
Aşırı terleme
Baş ağrısı
Tremor
Yüzde solukluk
Nefes darlığı
Göğüs ağrısı
Anksiyete
Bulantı
Karın ağrısı
Ortostatik hipotansiyon
Kilo kaybı



- Klinik şüphe
- Adrenal insidanteloma
- Med. Ca, PrHPTH
- Aile öyküsü
- Nörofibromatosis
  - Nörofibromlar
  - Kafeola spot
- Von Hippel Lindau
  - Hemanjioblastom
  - Hipernefroma

Feokromasitoma tanısı

- Tarama testleri
  - Φ
- Tanısal testler
  - 24 h idrarda katekolaminler
  - 24 h idrarda metanefrinler
  - 24 h idrarda vanil mandelik asit
  - 24 h idrarda dopamin
  - Plazma katekolaminler
  - Plazma metanefrinler
- Biyokimyasal tanı sonrası
  - Adrenal MRI, CT
  - Thorax, abdomen
  - MIBG
  - Biyopsi kesinlikle kontrendike
  - Genetik testler

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Anamnez – FM - Lab

Kilo artışı
Santral obezite
Aydede yüzü
Buffalo hörgücü
Platore
Supraklaviküler yağ yastıkçığı
Pembe mor stria
Kolay morarma
Oligomenore
Hirsutizm
Akne
Libido kaybı, ED
Halsizlik
Proksimal kas güçsüzlüğü
Depresyon/anksiyete
KŞ yüksekliği
Hipertansiyon
Osteoporoz

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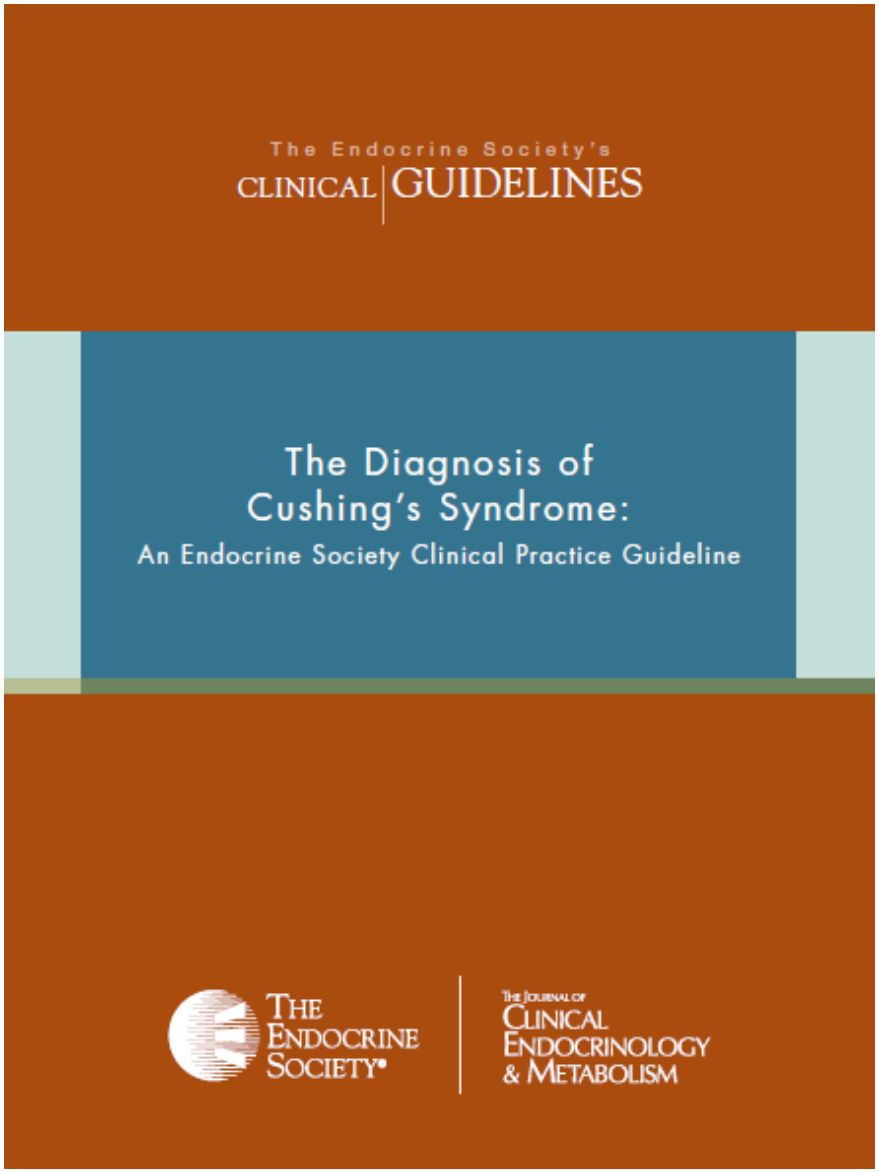

- Cushing şüphesi
  - Santral obezite/ekstremite zayıf
  - Pembe mor stria
  - Kolay morarma
  - Proksimal kas güçsüzlüğü
- Açıklanamayan
  - KŞ yüksekliği
  - Osteoporoz
  - Hirsutizm
- Adrenal insidanteloma

Cushing sendromu

- Tarama testleri
  - 24 h idrarda kortizol atılımı
  - 1 mg dexametazon süpresyon testi
  - Gece yarısı tükrük kortizolü
- Tanısal testler
  - CRH/dexametazon testi
  - 2 gün 2 mg düşük doz dexametazon süpresyon testi
  - Gece yarısı serum kortizol ölçümü
- Etyolojiye yönelik testler
  - Serum ACTH
  - 2 gün 8 mg yüksek doz dexametazon süpresyon testi
  - Sella MR
  - Adrenal CT
  - İnferior petrozal sinüs örneklemesi

Cushing Sendromu tanısında ilk basamak

- Random serum kortizol ölçümünün kıymeti yoktur

- 1 mg dexametazon baskılama testi (ng/dL)
  - Gece 23:00 2 tb dekort 0.5 mg po
  - Sabah 08:00-09:00 serum kortizol

Kortizol > 1,8 ug/dL

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Endokrin hipertansiyon tanısında zorluklar

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- Feokromasitoma
- Cushing sendromu

- Klinik aşikar olmayabilir
- Yavaş seyirli olabilir
- Tanısı kolay değil

- Akromegali
- Hipertiroidi
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- Tanıları kolay
- HT etyolojisinde nadir

Hangi hipertansif hastada Endokrin HT araştırılmalı?

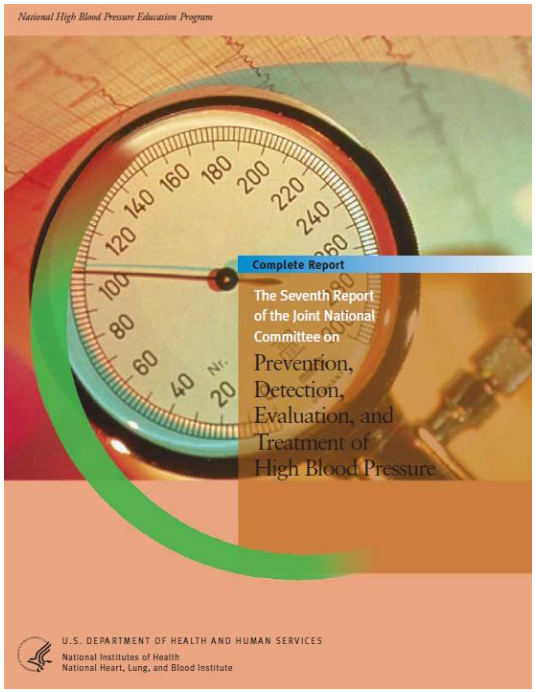
- Klinik şüphe varsa

Hipertansif her hastanın anamnez ve fizik muayenesi çok dikkatli yapılmalıdır.

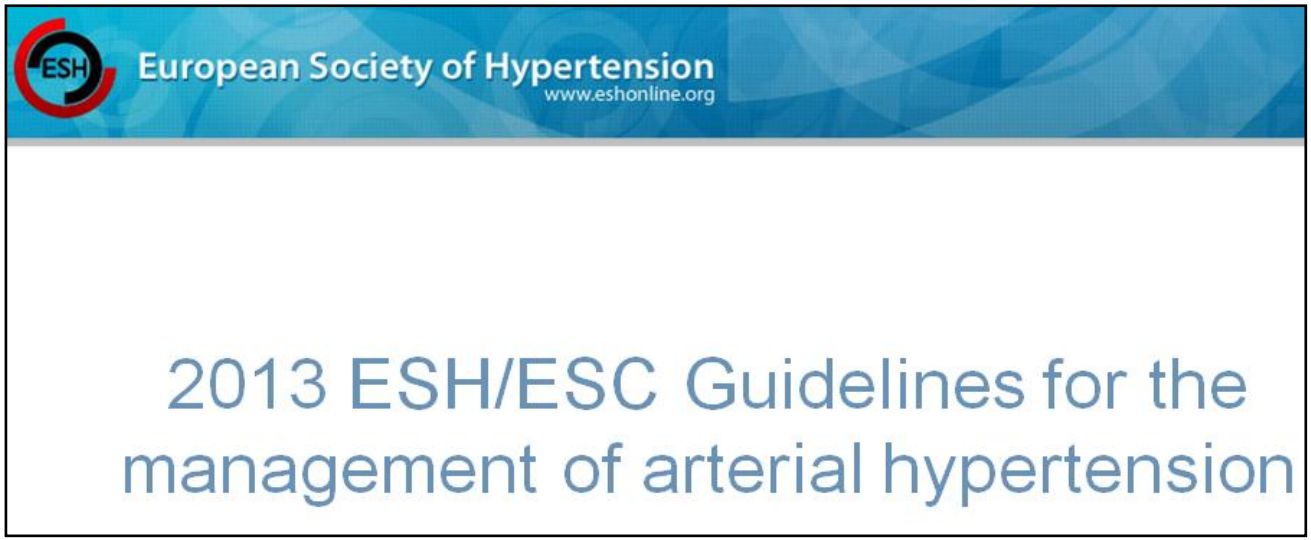
Hangi hipertansif hastada Endokrin HT araştırılmalı?

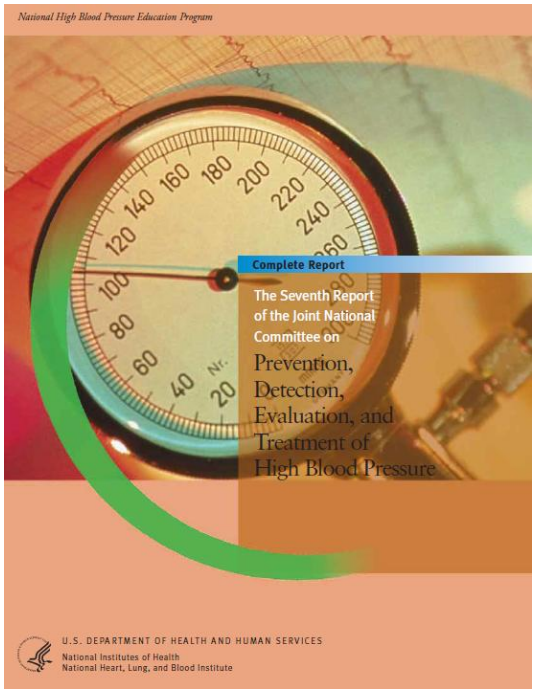
- Klinik şüphe varsa

- Klinik şüphe yoksa

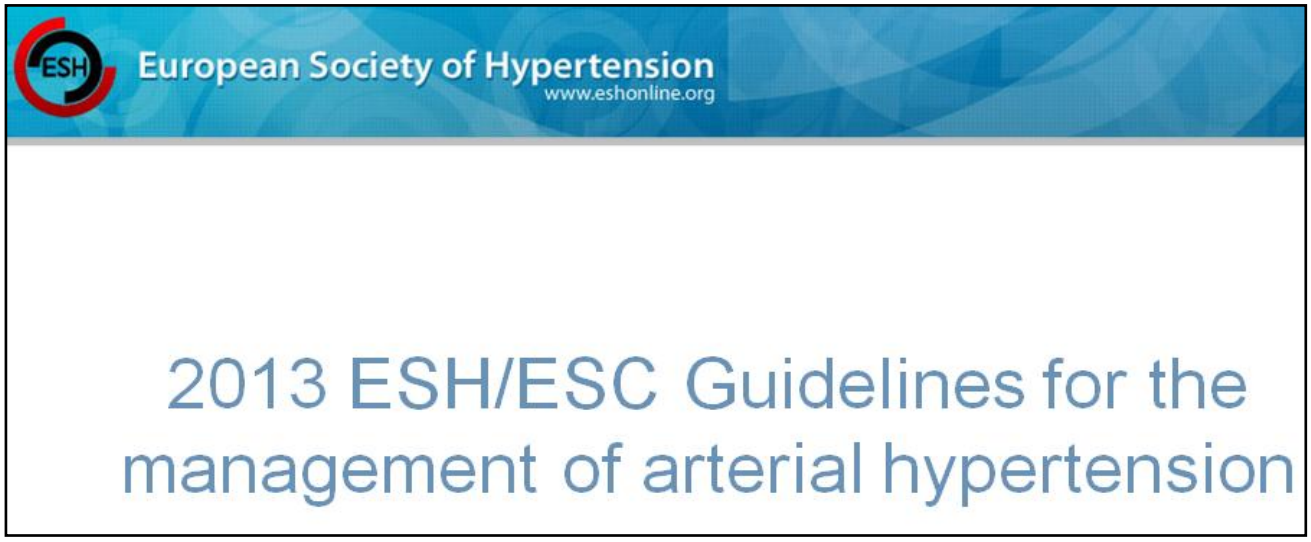


- Genç hastalar
  - HT başlama < 30 y
- İleri yaş hastalar
  - HT başlama > 55 y
- Tedaviye dirençli hastalar
  - > 3 lü kombine HT kontrolsüz





- Açlık kan şekeri
- Serum kreatinin
- Serum potasyum
- Serum kalsiyum
- Lipid profili
- Tam idrar tetkiki
- Hematokrit
- EKG



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- TSH

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Son Rehberler Işığında Diyabetik Hastada HT Tedavisi

Prof. Dr. Erdinç Ertürk
Uludağ Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları Bilim Dalı

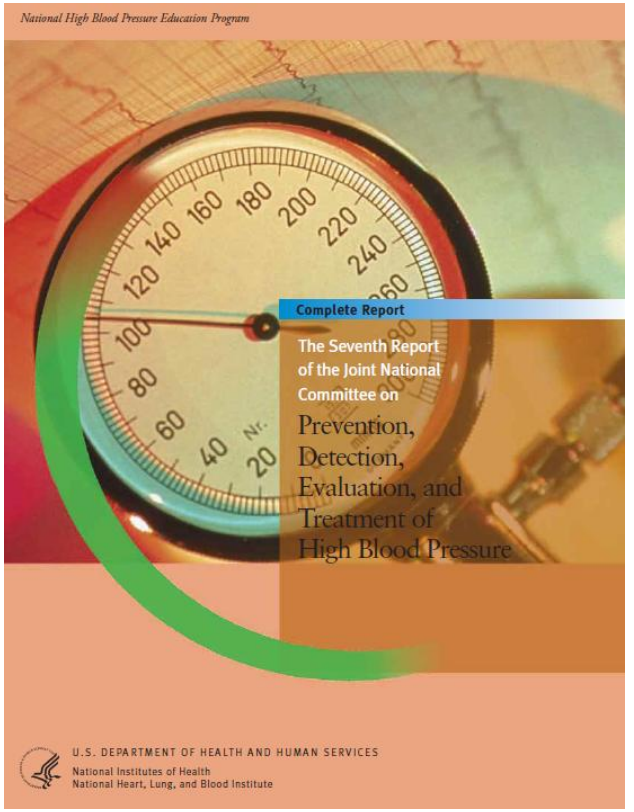
Uludağ İç Hastalıkları Günleri
Uludağ, 9 Mart 2015

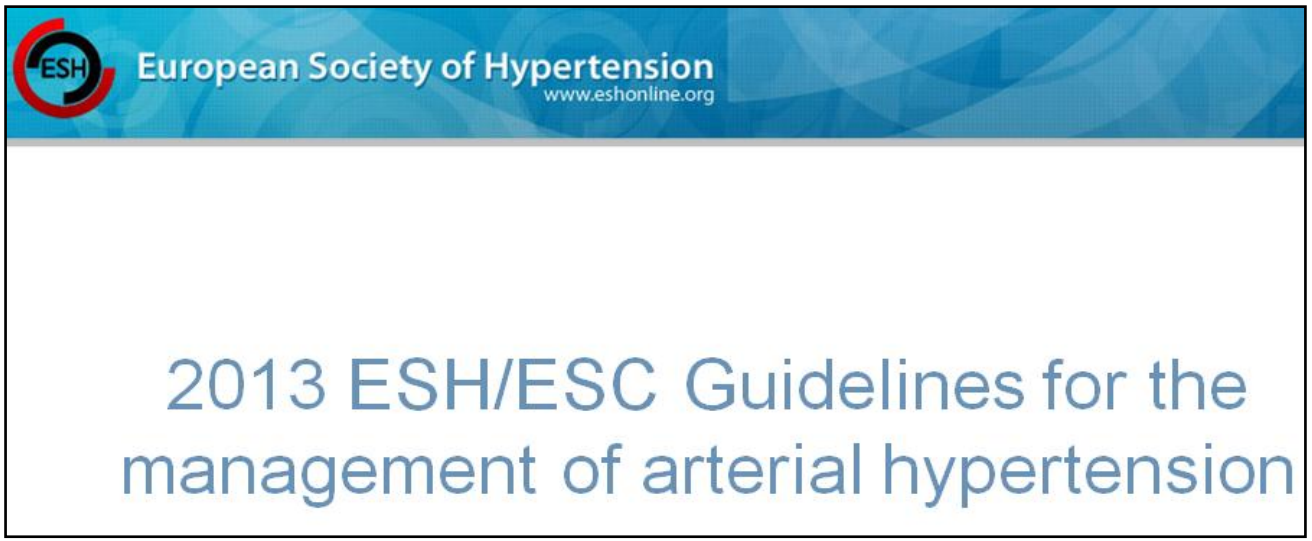
Son Rehberler Işığında

(ESH/ESC 2013, JNC-8 2014)

Diyabetik Hastada

Hipertansiyon Tedavisi





2013 ESH/ESC Guidelines for the management of arterial hypertension

European Society of Hypertension
European Society of Cardiology

Journal of Hypertension 2013;31:1281-1357

Blood pressure goals in hypertensive patients

Recommendations	
SBP goal for "most" •Patients at low–moderate CV risk •Patients with diabetes •Consider with previous stroke or TIA •Consider with CHD •Consider with diabetic or non-diabetic CKD	**<140 mmHg**
SBP goal for elderly •Ages <80 years •Initial SBP ≥160 mmHg	**140-150 mmHg**
SBP goal for fit elderly Aged <80 years	**<140 mmHg**
SBP goal for elderly >80 years with SBP •≥160 mmHg	**140-150 mmHg**
DBP goal for "most"	**<90 mmHg**
DB goal for patients with diabetes	**<85 mmHg**

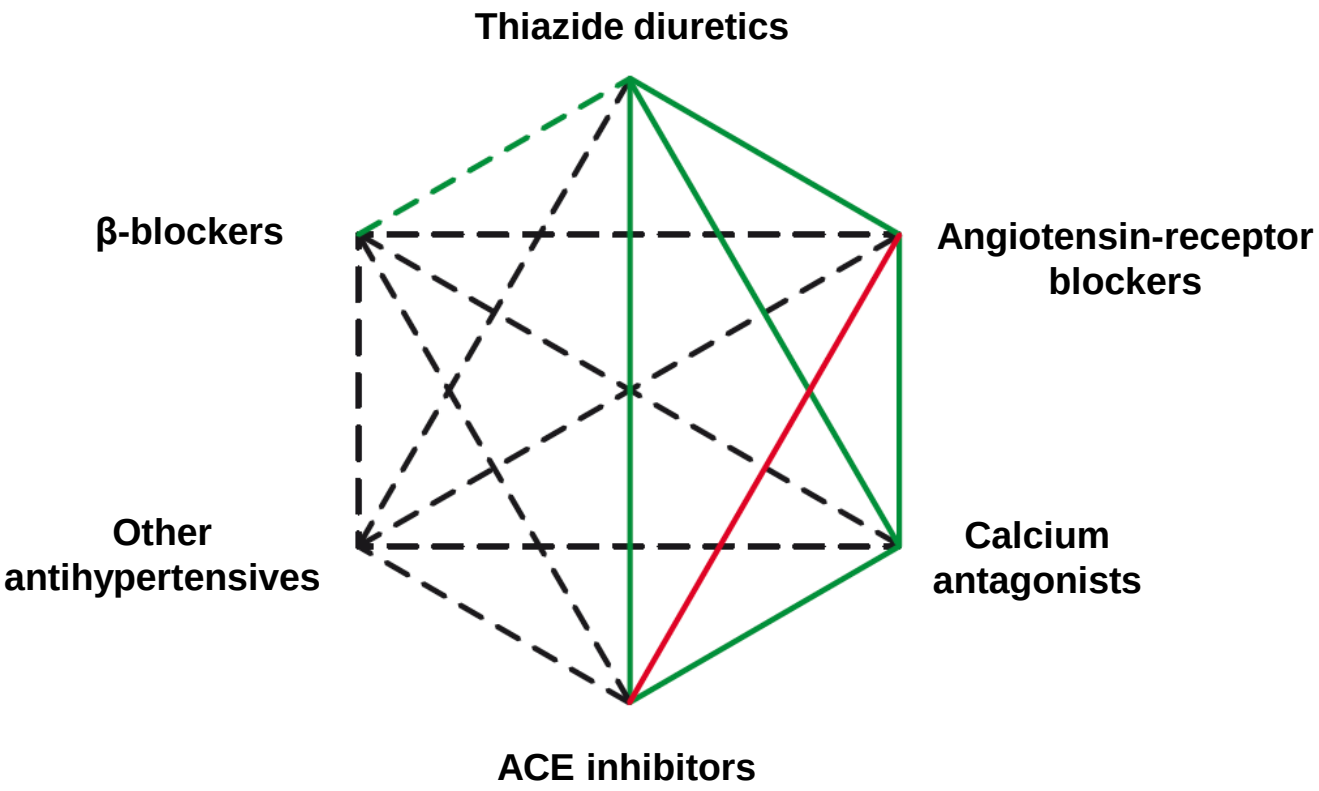
SBP, systolic blood pressure; CV, cardiovascular; TIA, transient ischaemic attack; CHD, coronary heart disease; CKD, chronic kidney disease; DBP, diastolic blood pressure.

Hypertension treatment options

Clinical scenario	Recommendations
Initiation and maintenance treatment *Monotheray or in combination*	• Diuretics (thiazides, chlorthalidone, indapamide) • BBs • CCBs • ACE-I • ARBs
Consider some agents as preferential choice in specific conditions due to:	• Use in trials in those conditions • Great effectiveness in specific types of OD
Consider two-drug combination therapy in patient with:	• High baseline BP • High CV risk
Combination of two RAS antagonists	*Not recommended*
Consider other drug combinations for BP reduction	Most preferable option may be combinations successfully used in trial
Combination therapy with fixed doses of two drugs in a single tablet	May be recommended due to potential for improved adherence

BB, beta-blocker; CCB, calcium channel blockers; ACE-I, angiotensin-converting-enzyme inhibitor; ARB, angiotensin receptor blocker; OD, organ damage; BP, blood pressure; CV, cardiovascular; RAS, renin–angiotensin system.

Possible combinations of classes of antihypertensive drugs



Green continuous lines: preferred combinations; **green dashed line**: useful combination (with some limitations); **black dashed lines**: possible but less well tested combinations; **red continuous line**: not recommended combination. Although verapamil and diltiazem are sometimes used with a beta-blocker to improve ventricular rate control in permanent atrial fibrillation, only dihydropyridine calcium antagonists should normally be combined with beta-blockers.

Hypertension treatment for people with diabetes

Recommendations	Additonal considerations
Mandatory: initiate drug treatment in patients with SBP ≥160 mmHg	• Strongly recommended: start drug treatment when SBP ≥140 mmHg
SBP goals for patients with diabetes: <140 mmHg	
DBP goals for patients with diabetes: <85 mmHg	
All hypertension treatment agents are recommended and may be used in patients with diabetes	• RAS blockers may be preferred • *Especially in presence of preoteinuria or microalbuminuria*
Choice of hypertension treatment must take comorbidities into account	
Coadministration of RAS blockers *not recommended*	• *Avoid in patients with diabetes*

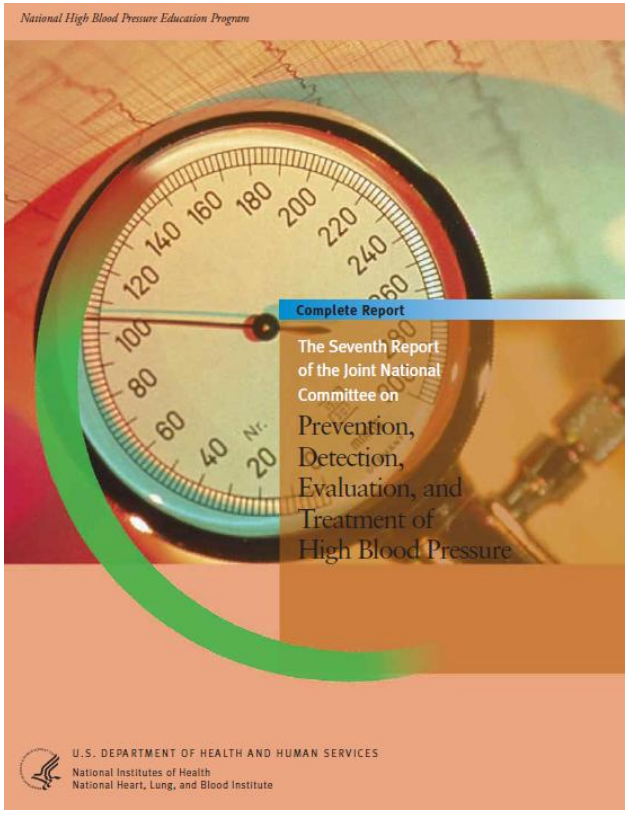
SBP, systolic blood pressure; DBP, diastolic blood pressure; RAS, renin–angiotensin system.

Special Communication

2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults

Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)

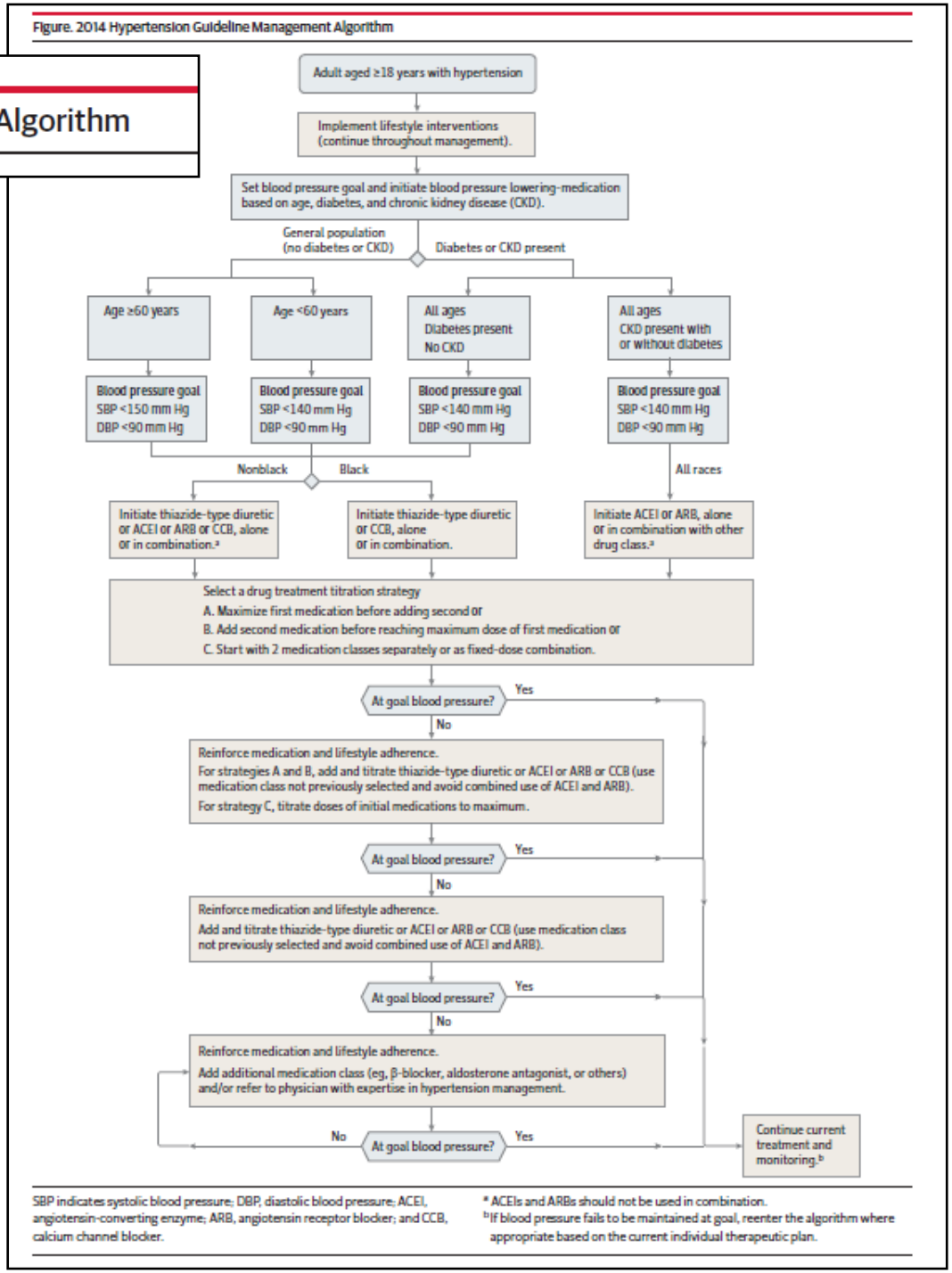
Paul A. James, MD; Suzanne Oparil, MD; Barry L. Carter, PharmD; William C. Cushman, MD; Cheryl Dennison-Himmelfarb, RN, ANP, PhD; Joel Handler, MD; Daniel T. Lackland, DrPH; Michael L. LeFevre, MD, MSPH; Thomas D. MacKenzie, MD, MSPH; Olugbenga Ogedegbe, MD, MPH, MS; Sidney C. Smith Jr, MD; Laura P. Svetkey, MD, MHS; Sandra J. Taler, MD; Raymond R. Townsend, MD; Jackson T. Wright Jr, MD, PhD; Andrew S. Narva, MD; Eduardo Ortiz, MD, MPH



Hypertension is the most common condition seen in primary care and leads to myocardial infarction, stroke, renal failure, and death if not detected early and treated appropriately. Patients want to be assured that blood pressure (BP) treatment will reduce their disease burden, while clinicians want guidance on hypertension management using the best scientific evidence. This report takes a rigorous, evidence-based approach to recommend treatment thresholds, goals, and medications in the management of hypertension in adults. Evidence was drawn from randomized controlled trials, which represent the gold standard for determining efficacy and effectiveness. Evidence quality and recommendations were graded based on their effect on important outcomes.

There is strong evidence to support treating hypertensive persons aged 60 years or older to a BP goal of less than 150/90 mm Hg and hypertensive persons 30 through 59 years of age to a diastolic goal of less than 90 mm Hg; however, there is insufficient evidence in hypertensive persons younger than 60 years for a systolic goal, or in those younger than 30 years for a diastolic goal, so the panel recommends a BP of less than 140/90 mm Hg for those groups based on expert opinion. The same thresholds and goals are recommended for hypertensive adults with diabetes or nondiabetic chronic kidney disease (CKD) as for the general hypertensive population younger than 60 years. There is moderate evidence to support initiating drug treatment with an angiotensin-converting enzyme inhibitor, angiotensin

Figure. 2014 Hypertension Guideline Management Algorithm



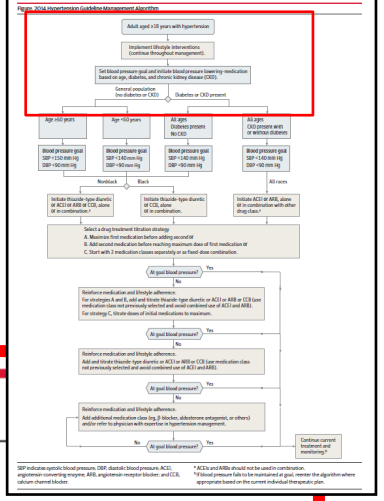
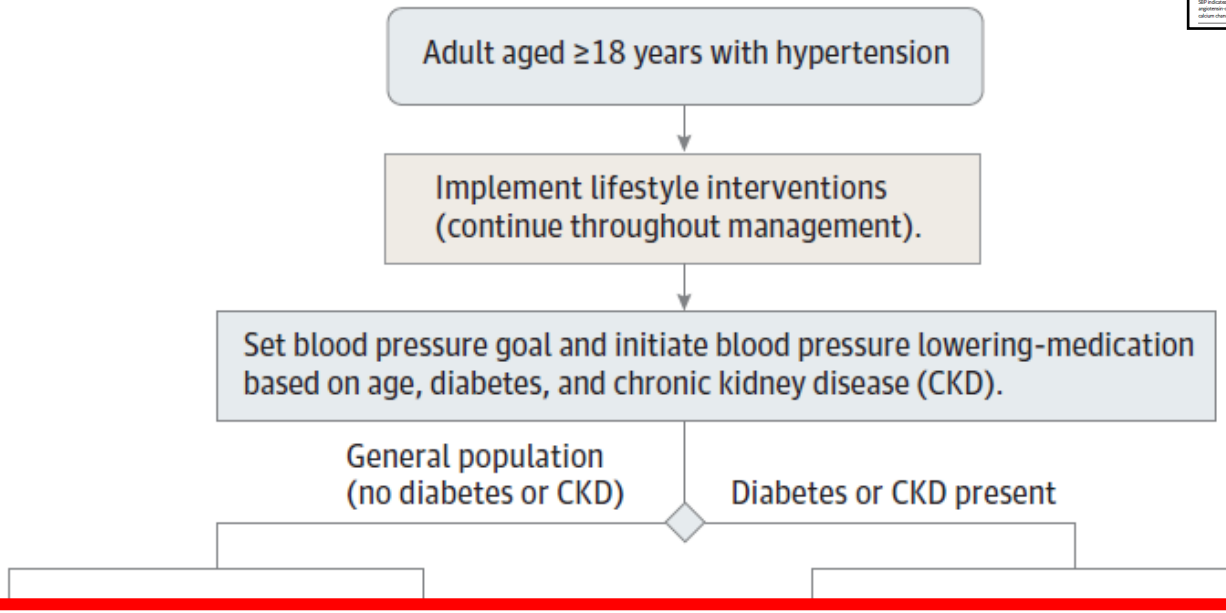
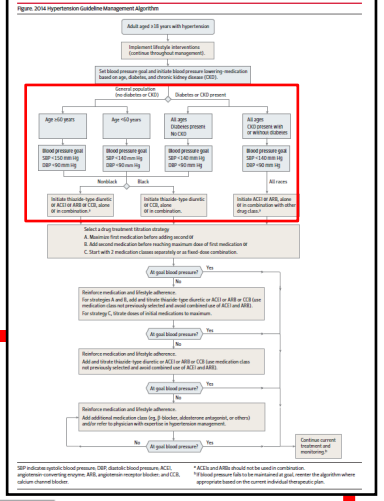


Figure. 2014 Hypertension Guideline Management Algorithm





General population (no diabetes or CKD)

Diabetes or CKD present

Age ≥60 years

Age <60 years

All ages
Diabetes present
No CKD

All ages
CKD present with or without diabetes

Blood pressure goal
SBP <150 mm Hg
DBP <90 mm Hg

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

Blood pressure goal
SBP <140 mm Hg
DBP <90 mm Hg

Nonblack

Black

All races

Initiate thiazide-type diuretic or ACEI or ARB or CCB, alone or in combination.[a]

Initiate thiazide-type diuretic or CCB, alone or in combination.

Initiate ACEI or ARB, alone or in combination with other drug class.[a]

Select a drug treatment titration strategy

A. Maximize first medication before adding second or

B. Add second medication before reaching maximum dose of first medication or

C. Start with 2 medication classes separately or as fixed-dose combination.

At goal blood pressure? Yes

No

Reinforce medication and lifestyle adherence.

For strategies A and B, add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).

For strategy C, titrate doses of initial medications to maximum.

At goal blood pressure? Yes

No

Reinforce medication and lifestyle adherence.

Add and titrate thiazide-type diuretic or ACEI or ARB or CCB (use medication class not previously selected and avoid combined use of ACEI and ARB).

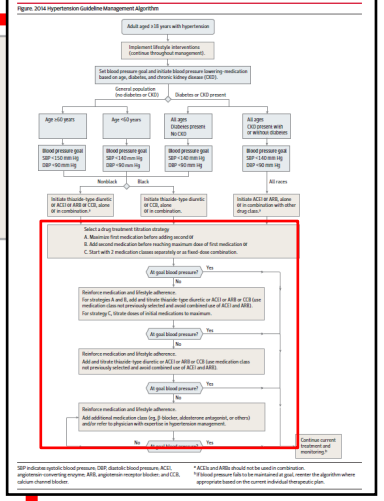
At goal blood pressure? Yes

No

Reinforce medication and lifestyle adherence.

Add additional medication class (eg, β-blocker, aldosterone antagonist, or others) and/or refer to physician with expertise in hypertension management.

No At goal blood pressure? Yes



Hipertansif Hastada Endokrinolojik Değerlendirme

Son Rehberler Işığında Diyabetik Hastada HT Tedavisi

Prof. Dr. Erdinç Ertürk
Uludağ Üniversitesi Tıp Fakültesi
Endokrinoloji ve Metabolizma Hastalıkları Bilim Dalı

Uludağ İç Hastalıkları Günleri
Uludağ, 9 Mart 2015