

The Importance of Adherence in HMOD Prevention

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HMOD

(Hypertension-Mediated Organ Damage)

1. Heart

- Left ventricular hypertrophy
- Angina or myocardial infarction
- Heart failure

2. Brain

- Stroke or transient ischemic attack

3. Chronic kidney disease

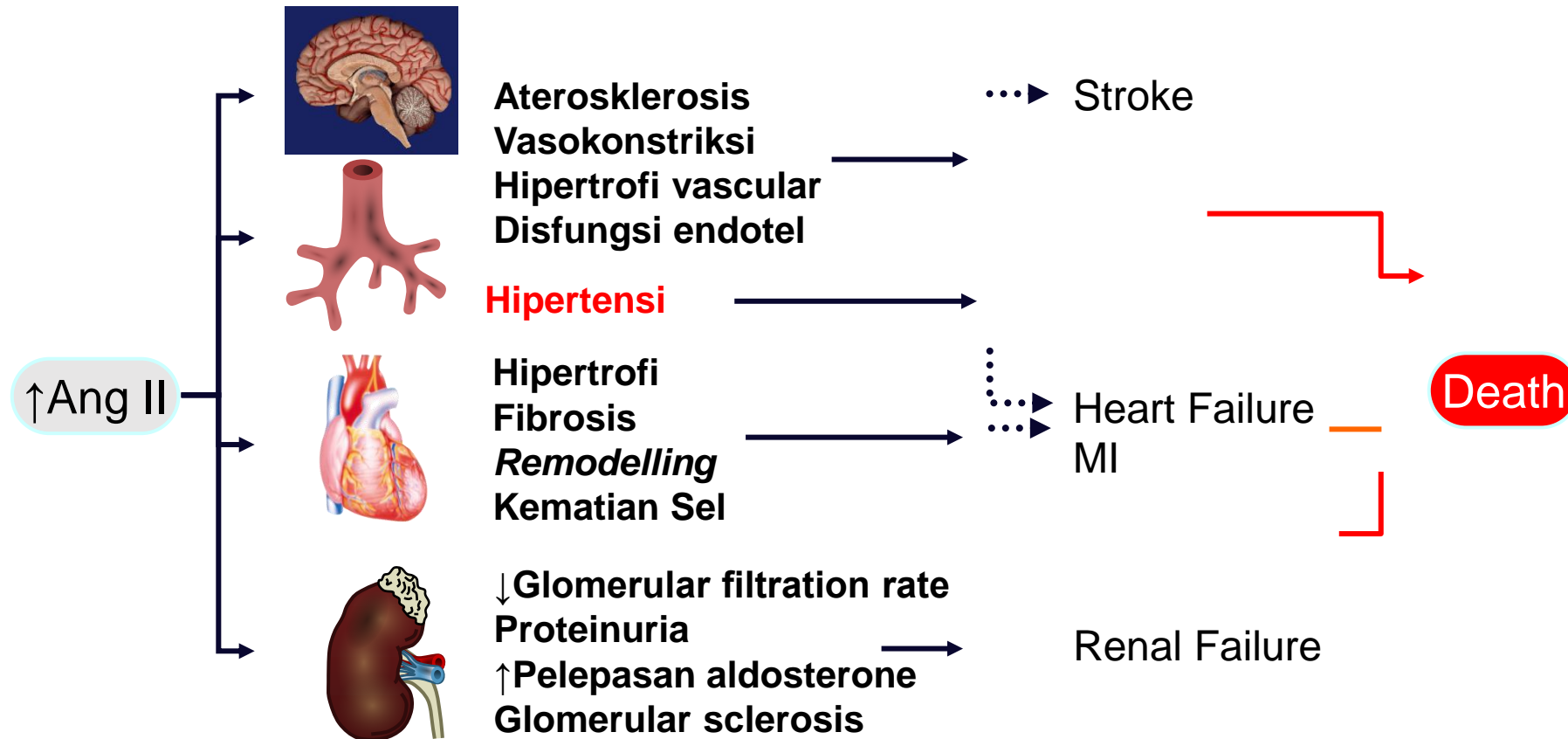
4. Peripheral arterial disease

5. Retinopathy

PENILAIAN HMOD (Hypertension-mediated organ damage)

PENAPISAN DASAR	INDIKASI DAN INTERPRETASI
EKG12-sandapan	Penapisan LVH dan gangguan kardiak lain,serta aritmia fibrilas atrial. Kriteria EKG LVH: > Sokolow-Lyon $S_{V1}+R_{V5}>35\text{mm}$, atau R di $a_{VL} \geq 11 \text{ mm}$; > Cornell voltage $S_{V3}+R_{a_{VL}} > 28\text{mm}$ (laki-laki) , > 20mm (perempuan)
Albuminuria	Protein urin kualitatif untuk deteksi kerusakan ginjal
Funduskopi	Deteksi retinopati hipertensi, terutama pada hipertensi derajat 2-3
PENAPISAN LANJUTAN	INDIKASI DAN INTERPRETASI
Ekokardiografi	Deteksi kelainan struktur dan fungsi kardiak, bila berdampak pada tatalaksana
Ultrasonografi karotis	Mengukur intima media thickness dan plak karotis
UltrasonogrFAi-Doppler abdomen	Evaluasi ukuran dan struktur ginjal, evaluasi aneurisma atau dilatasi aorta abdominal, evaluasi kelenjar adrenal (CT/MRI jika fasilitas tersedia)
PWV	Sebagai indeks kekakuan arteri dan arteriosklerosis: Tekanan denyut (pada usia tua) > 60 mmHg PWV karotis-femoral >10m/detik
ABI	Penapisan terdapatnya penyakit pembuluh darah tungkai (ABI < 0,9)
Uji fungsi kognitif	Evaluasi fungsi kognitif pada pasien dengan gejala gangguan kognitif
Pencitraan otak	Evaluasi terdapatnya iskemik atau perdarahan otak, terutama pada pasien Dengan Riwayat stroke atau penurunan fungsi kognitif

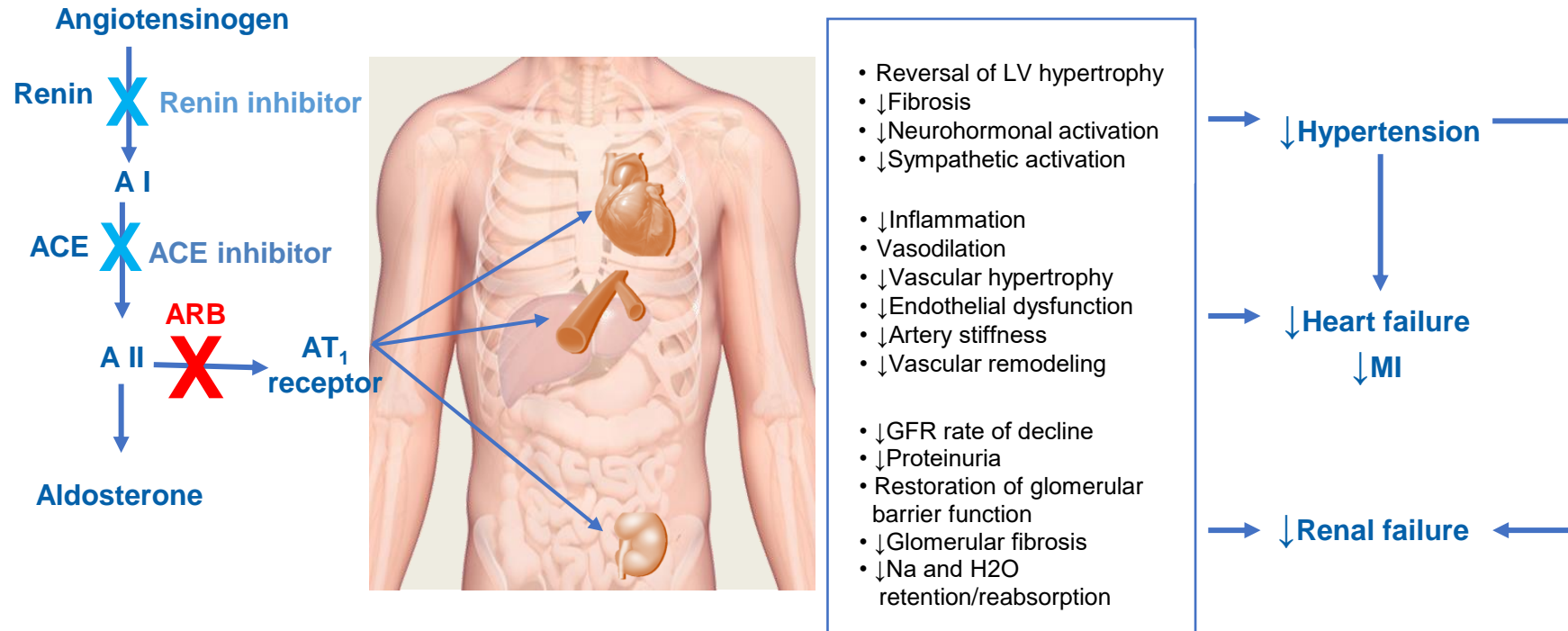
Chronic activation of the renin system contributes to end-organ damage



Ang, angiotensin
MI, myocardial infarction

Adapted from Anderson; Goodfriend; and Phillips In: Hypertension Primer, 2003.

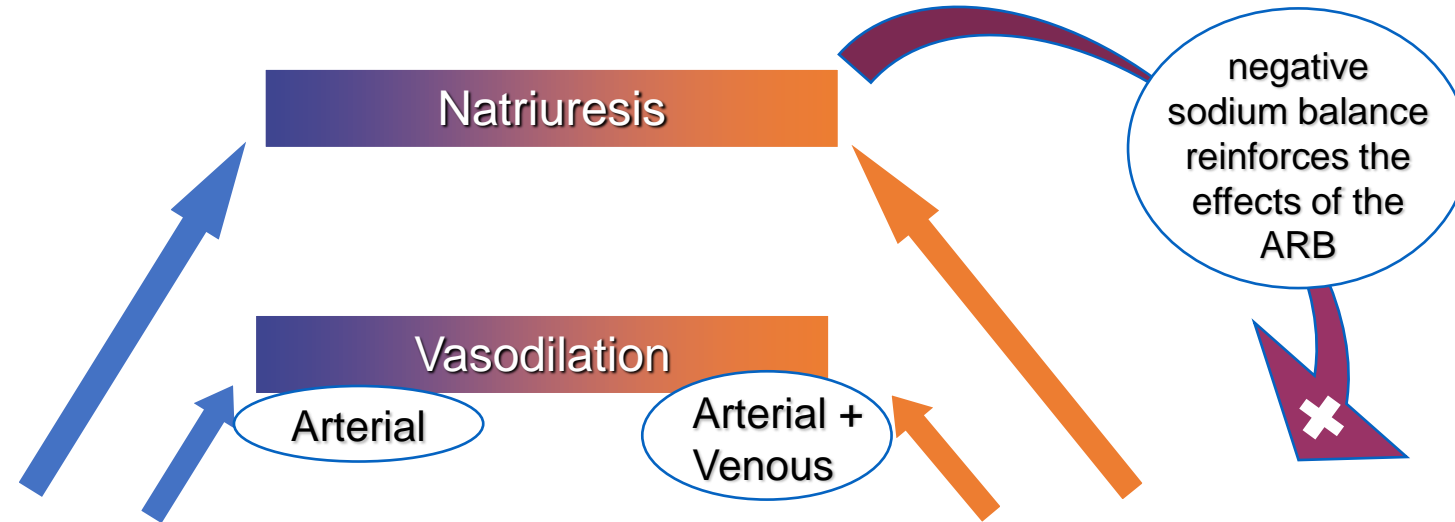
Sustained activation of RAAS can lead to hypertension, and is also implicated in CVD and HMOD



- A unique and important aspect of CV risk estimation in hypertensive patients is the need to consider the impact of HMOD (previously termed 'target organ damage')
- HMOD more accurately describes hypertension-induced structural and/or functional changes in major organs

ACE, angiotensin converting enzyme; ARB, angiotensin receptor blocker; AT, angiotensin; CVD, cardiovascular disease; GFR, glomerular filtration rate; HMOD, hypertension mediated organ damage; LV, left hypertrophy; MI, myocardial infarction.

CCBs and ARBs Interact Synergistically on Vascular and Renal Function, Sympathetic Nervous System and Renin-Angiotensin System Activity



CCB (Amlodipine)

- ↑ SNS → ↑ RAS
- Arteriodilation
- Effective in low-renin patients
- No renal or congestive heart failure benefits
- Peripheral edema
- Reduces cardiac ischemia

ARB (Valsartan)

- ↓ RAS → ↓ SNS
- Arterio- and venodilation
- Effective in high-renin patients
- Congestive heart failure and renal benefits
- Attenuates peripheral edema

SNS = sympathetic nervous system; RAS = renin-angiotensin system

Cummings, DM. *Arch Intern Med*, 1991; Vol 151 p 250-259

Amy Barreras et al. *BUMC Proceedings* 2003; 16:123-6

Grassi G, *J Hypertens* 2001;19:1713-16

Summary

- Hypertension is a major CV risk factor. Most of the patients need more than one agent to achieve BP target.
- CCB/ARB combination are recommended by guideline as preferred combination for its efficacy, safety and tolerability profile.
- SPC (e.g. Amlodipine/Valsartan) combination provides powerful BP reductions, favorable safety profile, as well as high BP goal and response rates, for hypertensive patients including those with comorbidities, thereby prevent HMOD