



**Goal BP = 130/85 mm Hg
(JNC V)**

Lower goal

- African Americans
- Patients with renal disease and proteinuria > 1 g/24 hours

Source: JNC V. **Ann Intern Med.** 1993;153:154-183.



**ARE THERE
SPECIFIC
RENOPROTECTIVE
ANTIHYPERTENSIVE
DRUGS?**



Nondiabetic Renal Disease

- **Treatment of BP lowers progression.**
- **Possible renoprotective drugs include:**
 - Angiotensin-converting enzyme (ACE) inhibitors; and**
 - Calcium channel blockers (possibly nondihydropyridines).**



Diabetic Nephropathy

- **Lower pressure slows the rate of loss of glomerular filtration.**
- **ACE inhibitors slow progression of diabetic nephropathy independent of BP**

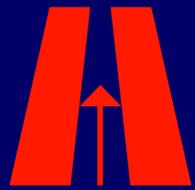


RENOVASCULAR DISEASE AND HYPERTENSION



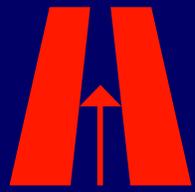
Definitions

- **Renal artery stenosis**
- **Renovascular hypertension**
- **Ischemic nephropathy**



Clinical Clues Suggesting Renovascular Hypertension

- **Onset of hypertension under age 25 or over age 55**
- **An abdominal bruit, particularly in diastole**
- **Refractory, accelerated, or malignant hypertension or worsening of previously controlled hypertension**
- **Undiagnosed renal failure, with or without hypertension (particularly with normal urine sediment)**
- **Acute renal failure precipitated by hypertension treatment, particularly with ACE inhibitors**
- **A unilateral small kidney (by any prior investigational procedure)**



Renovascular Disease and Hypertension

Most Useful Screening Tests

- **Captopril test**
- **Renal scintigraphy**
- **Duplex Doppler scanning**
- **Magnetic resonance angiography (MRA)**



Sensitivity and Specificity of Tests for Renovascular Hypertension

Test	Sensitivity (%)	Specificity (%)
Intravenous pyelography	75	86
Routine renography	75-85	75-85
Plasma renin activity	50-80	84
Captopril plasma renin activity	74	89
Captopril scintigraphy	93	95
Doppler flow ultrasonography	90	90-95
Magnetic resonance angiography	90-95	95

Source: Adapted from Mann SJ, et al. **Ann Intern Med.** 1992;117:845-853.



Management of Renovascular Hypertension

- Percutaneous transluminal renal angioplasty (PTRA)
- Renal artery stenting
- Bypass surgery



Renovascular Disease

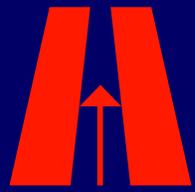
Angiography, with or without digital subtraction, is the “gold standard” for diagnosis for renovascular disease



Management of Renovascular Hypertension

In younger patients with fibromuscular dysplasia (FMD)

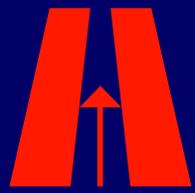
- PTR



Management of Renovascular Hypertension

In patients with focal nonostial atherosclerotic renal artery stenosis (RAS)

- **PTRA usually suitable**



Management of Renovascular Hypertension

In elderly patients with atherosclerotic renal vascular disease, intervention decisions usually based upon:

- Blood pressure control
- Preservation of renal function