

# From hypertension to atrial fibrillation

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## History

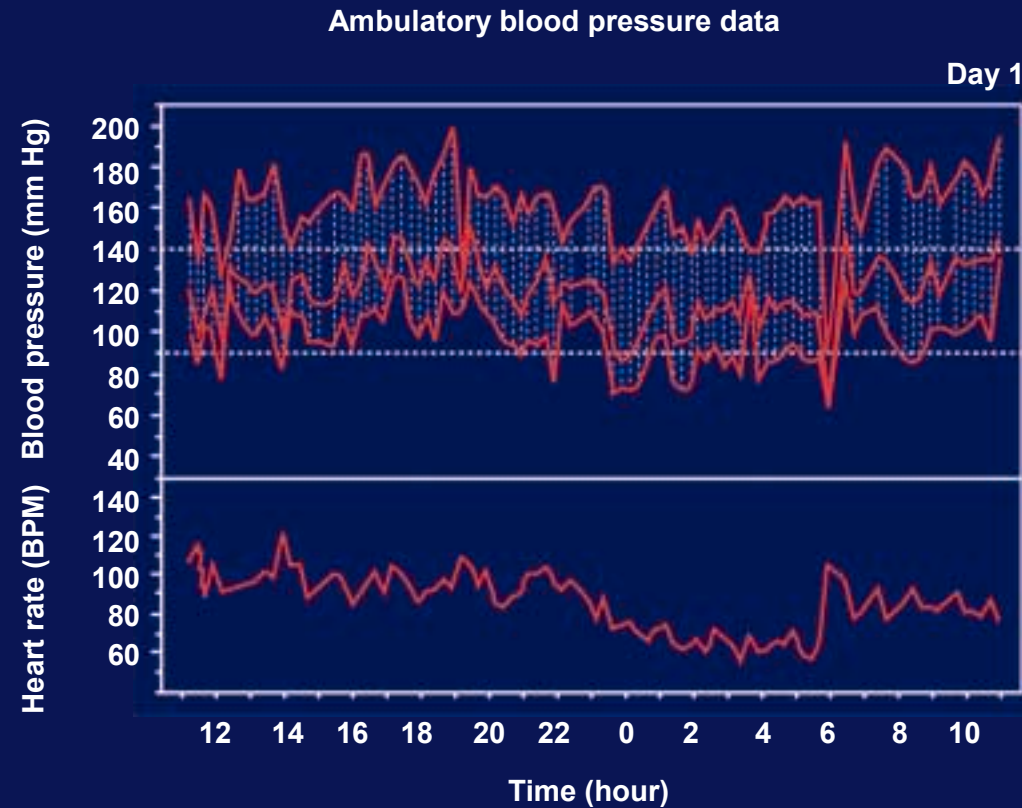
- 62-year-old man, essential HT diagnosed 10 years ago, treatment stopped 2 years ago
- Chronic atrial fibrillation over the last year, treated by digoxin and oral anticoagulants
- Smoked 10 cigarettes/day since age 22
- Father died of sudden cardiac death at 65, mother died of stroke at 71, brother with essential HT

## Physical examination

- Obese with BMI 33 kg/m<sup>2</sup>, pulse 80 bpm, BP 166/88 mm Hg
- Absence of abdominal bruits, neurologic deficits, unequal pulses, and elevated jugular venous pressure
- No cardiac murmurs, lungs clear
- Left carotid bruit

# Investigations

- Funduscopy: stage II hypertensive retinopathy
- ECG: atrial fibrillation
- 2D-guided M-mode echocardiography: concentric LVH and left atrial enlargement, elevated LVM ( $58 \text{ g/cm}^{2.7}$ )
- 24-hour ABPM: average daytime BP 168/102 mm Hg, average nighttime BP 144/91 mm Hg (*Figure*)
- Vascular ultrasonography: atherosclerotic lesion of the left common carotid artery, extending to internal carotid artery (stenosis of lumen of about 40%)



24-hour ABPM

## Questions

- A. What is the overall cardiovascular risk of this patient?**
  
- B. What is the relationship between hypertensive disease and atrial fibrillation?**
  
- C. What is the appropriate management of this patient?**

## Answers

**A. What is the overall cardiovascular risk of this patient?**

- This patient has a very high cardiovascular risk:
  - Smoker, obese, with chronic atrial fibrillation
  - Dyslipidemia, mild-to-severe HT, antihypertensive treatment unwisely stopped
  - LVH on echocardiography (*Figure*)
  - Atherosclerotic plaque on left common and internal carotid artery
  - Family history of CV disease



Echocardiography: left ventricular hypertrophy and left atrial enlargement

# Answers

## B. What is the relationship between hypertensive disease and atrial fibrillation?

- In untreated hypertensive subjects with sinus rhythm and without CV disease, age and LVM are independent predictors of atrial fibrillation
- In the PIUMA (Progetto Ipertensione Umbria Monitoraggio Ambulatoriale) study
  - Occurrence of atrial fibrillation independently predicted by age and LVM
  - Left atrial diameter: independent predictor of chronicity of atrial fibrillation
  - An ischemic stroke occurred in 12.1% of subjects with paroxysmal atrial fibrillation and in 30% of subjects with chronic atrial fibrillation

# Answers

## C. What is the appropriate management of this patient?

- Need for smoking cessation and weight loss
- Antihypertensive treatment necessary because of target-organ damage (LVH)
- Use of statins (dyslipidemia with high total cholesterol) strongly recommended
- BP control with
  - **Natrilix® SR (indapamide SR 1.5 mg), a diuretic that does not adversely affect lipid and glucose profiles**
  - **In association with a long-acting ACE inhibitor**
- If supplementary drug required, a  $\beta$ -blocker may be used