

Hypertension & Uncontrolled Hypertension

BACKGROUND INFORMATION

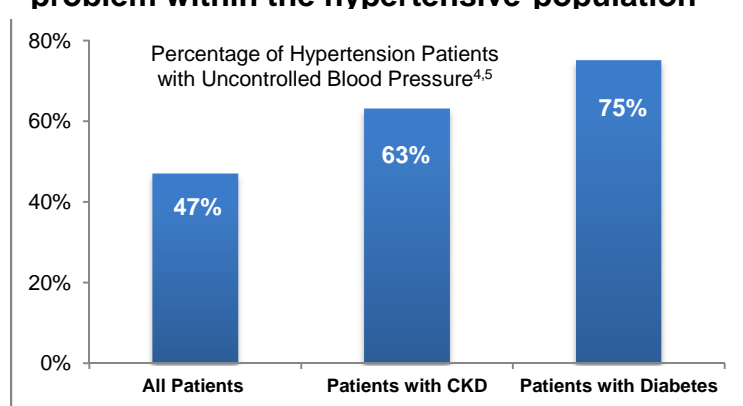
HYPERTENSION

- Hypertension, or high blood pressure, is a **chronic condition** in which the blood pressure in the arteries is higher than normal. This condition can put extra strain on the heart and circulatory system, which must work harder to circulate the blood.
- Hypertension is a **major risk factor** for a variety of cardiovascular (CV) diseases, including coronary artery disease, heart failure, stroke and peripheral vascular disease. Hypertension accounts for an estimated 54 percent of all strokes and 47 percent of all ischemic heart disease globally.¹
- Hypertension affects more than a quarter of all adults and is the **leading** attributable **cause of death** worldwide. It is estimated that over 1 billion people worldwide have hypertension.³
- The **global incidence** of hypertension among adults is expected to increase 60 percent by 2025.³
- Approximately 10 percent of all global **healthcare spending** is attributable to high blood pressure.²
- The annual worldwide **cost of hypertension** is estimated at \$370 billion.²

UNCONTROLLED HYPERTENSION

- Despite the widespread availability of antihypertensive medications, the blood pressure of many patients remains high and uncontrolled.
- This may be due to non-adherence to medication, diet and lifestyle causes, interfering medications, or underlying diseases.
- Approximately 45-81 percent of patients with hypertension have uncontrolled hypertension.⁶
- It is estimated that over ten million people worldwide have high blood pressure, despite taking two or more medications.³

Uncontrolled blood pressure is a substantial problem within the hypertensive population



CKD = Chronic Kidney Disease

COUNTRY FACTS



3.6 million French adults have uncontrolled blood pressure above 160/95 mm Hg⁸

- 41 percent of French adults have hypertension⁹
- 76 percent of treated hypertensive patients have uncontrolled blood pressure⁹
- €3.36 billion annual costs of adverse events due to uncontrolled high blood pressure⁸



Germany has the highest rate of hypertension in the world³

- 55 percent of Germans 35-64 years old have hypertension⁷
- 70 percent of treated hypertensive patients have uncontrolled blood pressure⁷
- €3.6 billion annual costs of adverse events due to uncontrolled high blood pressure⁸



498,000 cardiovascular events in Italy attributable to uncontrolled high blood pressure annually⁸

- 38 percent of Italians 35-65 years old have hypertension⁷
- 72 percent of treated hypertensive patients have uncontrolled BP⁷
- €2 billion annual costs of CV events due to uncontrolled high blood pressure⁸



49 percent of hypertensive patients in Spain received treatment¹⁰

- 47 percent of Spaniards 35-65 years old have hypertension⁷
- 81 percent of treated hypertensive patients have uncontrolled blood pressure⁷
- 22 percent of mortality in middle aged population attributable to hypertension¹¹



477,000 cardiovascular events are due to uncontrolled high blood pressure in the UK⁸

- 42 percent of Britons 35-64 years old have hypertension⁷
- 60 percent of treated hypertensive patients have uncontrolled blood pressure⁷
- €1.4 billion annual costs of CV events due to uncontrolled high blood pressure⁸

RESISTANT HYPERTENSION

Resistant hypertension occurs in a subset of patients with uncontrolled hypertension; “resistant” patients have hypertension despite adherence to three or more antihypertensive drugs including a diuretic.¹²

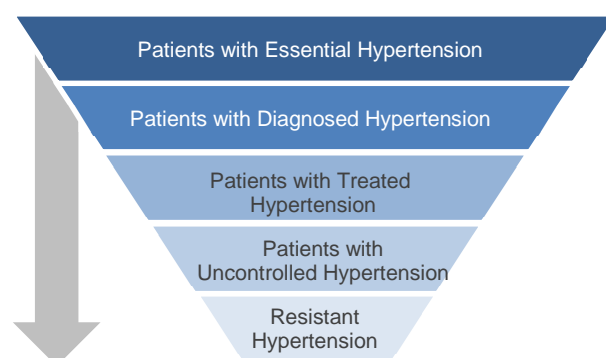
Within 1.5 years, 1 in 50 patients diagnosed with hypertension will develop resistant hypertension:

Classification	Systolic Blood Pressure (mm Hg)	Diastolic Blood Pressure (mm Hg)
Normal	<120	And <80
Pre-hypertension	120-139	Or 80-89
Stage 1 hypertension	140-159	Or 90-99
Stage 2 hypertension	>160	Or >100
Hypertension in patients with diabetes or chronic kidney disease	>130	Or >80

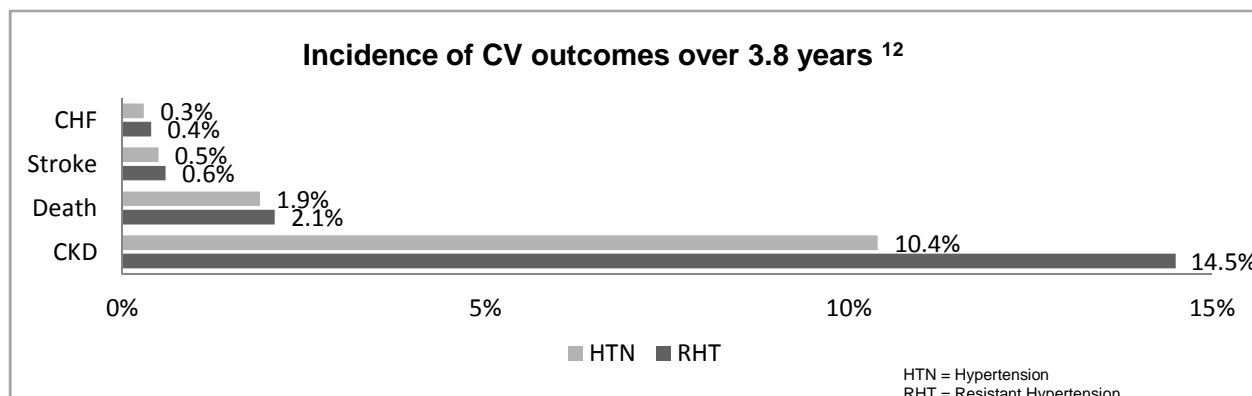
- Resistant hypertension is defined as office blood pressure >140/90 mm Hg or 130/80 mm Hg in patients with diabetes or chronic kidney disease despite use of three or more antihypertensives.¹³
- Resistant hypertension is also defined as office blood pressure at goal with four or more antihypertensive medications required to control blood pressure.¹⁴
- Twelve percent of all treated hypertension patients have treatment-resistant hypertension.⁶

Resistant hypertension is a subset of uncontrolled hypertension:

- Underlying causes of resistant hypertension include excessive sympathetic nervous system activity.¹⁵
- The higher rate of cardiovascular events in patients with uncontrolled blood pressure contributes to the substantial economic burden of resistant hypertension to both the healthcare system, and the families of patients with resistant hypertension.¹²
- Complications of pharmaceutical therapy are the biggest impact to quality of life in patients with resistant hypertension.¹⁶ In most cases, clear documentation of attempts at blood pressure control is required prior to authorising treatment for resistant hypertension.

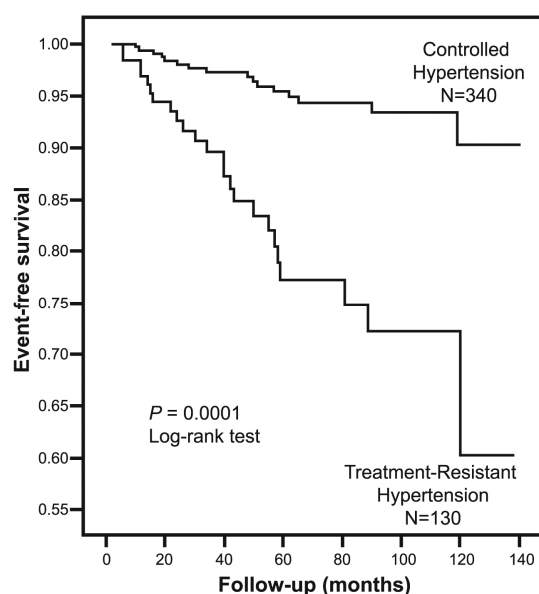


RESISTANT HYPERTENSION PATIENTS HAVE HIGHER RISKS OF CV EVENTS



Overall, a 33 percent higher incidence of poor cardiovascular outcomes in resistant hypertension patients compared to non-resistant patients (18 percent vs. 13.5 percent, $p < 0.001$)¹ has been observed.

Incidence of CV events in controlled versus treatment resistant hypertension patients¹⁷



- CV event rate at 5-year follow-up was nearly four times higher for resistant hypertension than controlled hypertension (19 percent vs. 5 percent).
- Differences between groups were apparent from very early in the follow-up period, indicating the urgent need for blood pressure control in patients with treatment-resistant hypertension.

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