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## Hypertension

### Clinical profile and management approaches of resistant hypertension in India



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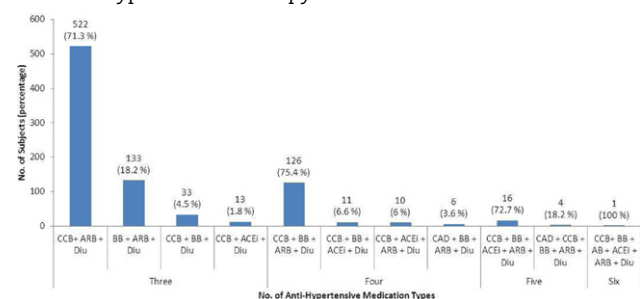
**Background:** Hypertension remains uncontrolled despite availability of newer drugs, and it accounts for significant morbidity and mortality in India and many developing nations. Resistant hypertension is very common problem in India.

**Objective:** To evaluate the patient profile, co-morbidities, management with anti-hypertensive medications in resistant hypertension across India.

**Method:** A total of 4725 uncontrolled hypertensive patients who were on anti-hypertensive medications were evaluated in a cross-sectional, observational study. The observed patterns were recorded with respect to demographics, medical history, anti-hypertensive medications, lifestyle modifications, and concomitant medications.

**Result:** Out of 4725 subjects, 922 (19.5%) subjects had resistant hypertension. Majority (67.2%) of the patients were males, aged 46–55 (40.5%) and 56–65 years (39.6%). The mean age of the patients was 52.6 (8.25) years. Majority of the patients were residents from the state of Andhra Pradesh (21.4%) and Maharashtra (19.3%). More than 20% were post graduates and 52.2% of the patients were employed. Mean systolic and diastolic blood pressure was 158.83/97.89 mmHg. 78.9% of the patients had reported co-morbidities. Diabetes (46.9%) and dyslipidemia (20.8%) were main ongoing co-morbid conditions.

Most of the patients (79.4%) were on three combination anti-hypertensive therapy followed by four combination (18.1%). 71.3% of the patients used CCB + ARB + diuretics three combination anti-hypertensive therapy.



Proportion of resistant hypertensive patients taking three or more anti-hypertensive medications (n = 922).

**Conclusion:** Resistant hypertension is most often due to a failure to treat hypertension appropriately. The preferred anti-hypertensive therapy for resistant hypertension patients is triple combination of anti-hypertensive regimen ARB + CCB + Diuretics. Patients may require four or more classes of antihypertensive drugs, some at high doses, to achieve control.

### Clinical profile and management approaches of uncontrolled hypertension in India



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**Background:** Hypertension remains uncontrolled despite availability of newer drugs, and it accounts for significant morbidity and mortality in India and many developing nations.

**Objective:** To evaluate the patient profile, co-morbidities, management with anti-hypertensive medications in uncontrolled hypertension patients and also to determine the number of patients with resistant hypertension across India.

**Method:** A total of 4725 uncontrolled hypertensive patients who were on anti-hypertensive medications were evaluated in a cross-sectional, observational study. The observed patterns were recorded with respect to demographics, medical history, anti-hypertensive medications, lifestyle modifications and concomitant medications.

**Results:** Majority of the patients in the study were males (71.4%). Most of the patient population was either overweight (46%) or obese (24.8%). All patients had ongoing co-morbid condition of diabetes, dyslipidemia, chronic kidney disease, congestive heart failure, hormone replacement therapy in females and ischemic heart disease. Diabetes (33.7%) and dyslipidemia (10.5%) were the two main co-morbidities observed largely. Most of the patients were treated with mono (45.4%), dual (31.7%) or triple combination (8.6%) therapy of anti-hypertensive agents. ARB was the most preferred agent as monotherapy (70.6%) and also the most common component of dual and triple combination anti-hypertensive agent.

**Conclusion:** Co-morbidities such as dyslipidemia or diabetes were majorly associated with uncontrolled hypertension. Monotherapy was leading trends of anti-hypertensive therapy followed by dual and triple combination therapy. The preferred choices for mono therapy, dual and triple combination of anti-hypertensive regimens were ARBs, ARB + CCB (calcium channel blocker), and ARB + CCB + diuretics, respectively.