Combination Therapy Versus Monotherapy in Reducing Blood Pressure: Meta-analysis on 11,000 Participants from 42 trials

Problem: A 68yo male VA patient who is on 12.5mg Hydrochlorothiazide with uncontrolled hypertension. Which is more advantageous to the patient – increase HCTZ to 25mg or to add another agent?


- In short: Meta-analysis with rigid selection criteria allowing for data collection over a larger group of subjects increasing the accuracy of data and validity of conclusions.

Type of Study: Meta-Analysis of Randomized Controlled Trials (RCTs)

Question: Does adding a second antihypertensive agent to a regimen lead to improved blood pressure control when compared to increasing the dose of a single-agent regimen?

Relevance: Hypertension is very common as a component of the metabolic syndrome and as an isolated problem.

Method:
- **P:** Adult patients with HTN, undergoing treatment. Total of 10,698 patients from 42 articles included.
- **E:** Multi-drug regiments of antihypertensive medications
- **C:** vs Placebo and single-agent regiments
- **O:** Primary — Placebo-subtracted blood pressure reductions

Critical Appraisal:
- **Prognosis Equality and Randomization:** No reason to suspect difference in prognosis. Only RCTs with placebo control were included. Blinding not specified.
- **Analysis:** Placebo-subtracted values used, used “equivalent doses” with values obtained from reference sources
- **Follow-up:** No less than 2 weeks, the exact durations not listed.

Results:
- Primary Outcomes:
  1. Blood pressure reduction: Combination of 2 classes of anti-hypertensives was 5 times more efficient than doubling a single-agent dose

- Secondary Outcomes:
  1. None

Applicability: Very applicable for general practice, especially outpatient clinics.
- Not taking into account the variable pricing of the different groups of antihypertensives
- Does not account for additional compelling indications for some classes