Diuretics should be my first choice in treating Hypertension

by

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An additional rational for the use of diuretics in Egypt

“High salt intake in Egypt”

The place of diuretics in the international guidelines

- WHO/ISH 1999:¹
  - "Diuretics constitute one of the most valuable classes of the antihypertensive drugs".
  - "Diuretic-based treatment regimens have been shown to prevent major cardiovascular events, including stroke and CHD".

- ALLHAT study:²
  - "thiazide diuretics should be considered first for pharmacological therapy in patients with hypertension"

- BP should be reduced to at least below 140/90mmHg (systolic/diastolic), and to lower values, if tolerated, in all hypertensive patients.

- In hypertensive type 2 diabetic patients, it can be recommended to lower blood pressure, whenever possible, to < 130/80 mmHg.

Salt Intake in Egypt

2007 ESC Guidelines for the Management of Arterial Hypertension

BP should be reduced to at least below 140/90mmHg (systolic/diastolic), and to lower values, if tolerated, in all hypertensive patients.

In hypertensive type 2 diabetic patients, it can be recommended to lower blood pressure, whenever possible, to < 130/80 mmHg.
Key messages from JNC-7

- Most hypertensive patients will require 2 or more drugs to reach goal BP.
- If BP > 20/10 above goal start with 2 drugs (as should be done).
- Therapy will be effective only if patients are motivated.
- Despite of guidelines the responsible physician’s judgment remain paramount.

Compelling Indications for Individual Drug Classes

<table>
<thead>
<tr>
<th>Compelling Indication</th>
<th>Initial Therapy Options</th>
<th>Clinical Trial Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart failure</td>
<td>THIAZ, BB, ACE, ARB, ALDO ANT</td>
<td>ACC/AHA Heart Failure Guideline, MERIT-HF, COPERNICUS, CIBIS, SOLVD, APOL, TRACE, VALHEFT, RALES</td>
</tr>
<tr>
<td>Postmyocardial infarction</td>
<td>BB, ACE, ALDO ANT</td>
<td>ACC/AHA Post-MI Guideline, BHAT, SAVE, Capricorn, EPHEMUS</td>
</tr>
<tr>
<td>High CAD risk</td>
<td>THIAZ, BB, ACE, CCB</td>
<td>ALLHAT, HOPE, ANBP2, LIFE, CONVINCE</td>
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JNC7 Special Indications for Individual Drug Classes

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<td>Diabetes</td>
<td>THIAZ, BB, ACE, ARB</td>
<td>NKF-ADA Guideline, UKPDS, ALLHAT</td>
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<tr>
<td>Chronic kidney disease</td>
<td>ACEI, ARB</td>
<td>NKF Guideline, Captopril Trial, RENAAL, IDNT, REIN, AASK</td>
</tr>
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<td>Recurrent stroke prevention</td>
<td>THIAZ, ACEI</td>
<td>PROGRESS</td>
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Thiazides First-line for Hypertension

- Total mortality, coronary heart disease and end-stage renal disease are similar for first-line thiazides, CCBs and ACEIs.
- Heart failure is increased with first-line CCBs as compared to thiazides or ACEIs.
- Stroke is reduced with first-line thiazides as compared to ACEIs.
- BP control and tolerability are better with first-line thiazides as compared to ACEIs.
- Cost is substantially less for thiazides as compared to beta-blockers, ACEIs, CCBs, alpha blockers, and angiotensin receptor blockers.

Indapamide, A unique mode of action

- High-lipophilic binding to arterial wall
- Elimination through the kidney

- Maximal Direct Vascular Effect
- Sub-clinical Renal Saluretic Effect

1. Regulation of calcium influx into VSMC
2. Increase synthesis of PGE and PG12
Significant reduction in microalbuminuria in type 2 diabetic hypertensives\(^6\)
- Respect glucose parameters\(^6\)
  - \(\checkmark\)
  - X
- Effect on K+ level\(^1\)
  - Minimal effect
  - Hypo-kalemia +++
- Effect on uric acid\(^4\)
  - Minimal effect
  - Hyperuricemia +++

### Efficacy on SBP reduction\(^2\)
- Indapamide SR: -16 mm Hg
- HCTZ 25 mg: -18 mm Hg

### Significant regression of LVH\(^4\)
- \(\checkmark\)
- X

### 24-hour BP control
- \(\checkmark\)

### Conclusion
- Diuretics especially thiazide-like (Indapamide) is
  - Effective,
  - Cheap,
  - Well tolerated,
  - Reduces BP & complications of hypertension including the hard endpoints.
- Therefore, I should include it as my first choice in most patients.