Additional file 6: Antihypertensive Medication Treatment Algorithm

Newly diagnosed hypertension or previously diagnosed uncontrolled hypertension (BP ≥140/90 mm Hg)

URGENT specialist referral if:
- Accelerated hypertension: systolic BP ≥180 mmHg, diastolic BP ≥120 mmHg
- Acute conditions: Chest pain, shortness of breath, systemic disease

Does patient have Co-morbidities?

YES

Non-pharmacologic intervention

Is BP ≥160/100 mm Hg?

NO

Non-pharmacologic intervention

Specialist referral

Are the comorbidities DM and/or proteinuria?

YES

Non-pharmacologic intervention

NO

Re-assess BP after 12 weeks

BP NC

Continue non-pharmacologic therapy

BP C

Non-pharmacologic intervention

High CV risk:
- Add statin

Anti-HTN drug: C

BP NC

Continue therapy

BP C

A+C

Continue therapy

A+C+D

Specialist referral

BP NC

Notes:
- Target blood pressure: <140/90 mm Hg for all patients
- Follow-up every 6 to 8 weeks for BP evaluation at each treatment step until BP is controlled.

Examples of recommended anti-HTN drug classes

<table>
<thead>
<tr>
<th>Anti-HTN Drug</th>
<th>HD</th>
<th>FD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARB</td>
<td>50mg</td>
<td>100mg</td>
</tr>
<tr>
<td>ACEI</td>
<td>10 mg</td>
<td>20 mg</td>
</tr>
<tr>
<td>C</td>
<td>5mg</td>
<td>10mg</td>
</tr>
<tr>
<td>D</td>
<td>12.5 mg</td>
<td>25 mg</td>
</tr>
</tbody>
</table>

Co-morbidities:
- Established cardiovascular disease, renal disease, DM, target organ damage (TOD)-e.g. left ventricular hypertrophy, retinopathy, proteinuria

Non-pharmacologic intervention:
- DASH diet and dietary sodium reduction, increase physical activity, weight reduction, stop smoking and stop/reduce alcoholic beverage intake.
- Non-pharmacologic intervention must be maintained and reinforced continually for all patients.

High CV Risk if any of the following:
- Age ≥25 years AND SBP ≥160 mm Hg
- Diabetes
- Past history of heart disease
- Past history of stroke
- Current smoker
- Statin (e.g. Simvastatin 20 mg)

General strategy is to start one drug at half standard dose then titrate to full dose before starting the next drug.

Alternative strategy: Start one drug at half standard dose, if BP still not at target, add the next drug at half standard dose. Subsequently, each of the drugs, in turn, can be titrated to full standard dose to attain BP control.

If patient already on anti-HTN drug at initial consult:
- Existing drug in algorithm → continue current medication AND add another drug class from the algorithm at half standard dose.
- Existing drug NOT in algorithm → If NO compelling indication for existing drug, discontinue and replace with another drug class as in algorithm.

ACEI and ARB not to be prescribed concomitantly.