Hypertension: Management and Risk Factors

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Outline

- Introduction
- Methods
- Results
- Discussion
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- Acknowledgments
How Common is HPT?

- 5th cause of outpatient morbidity and hospital admission per GHS 2004-2006
- rural studies from the 1970-1990s, the prevalence of HPT was estimated to be 4.1%
- Data from 2001-2002, found that in a rural Ashanti community, about 33% of the population ≥ 65 had HPT (i.e., BP ≥ 140/90 mm Hg).
### Introduction

#### 12.2 Top Ten Causes of Death All Ages

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malaria</td>
</tr>
<tr>
<td>2</td>
<td>HIV/AIDS related conditions</td>
</tr>
<tr>
<td>3</td>
<td>Anaemia</td>
</tr>
<tr>
<td>4</td>
<td>Cerebro Vascular Accidents</td>
</tr>
<tr>
<td>5</td>
<td>Pneumonia</td>
</tr>
<tr>
<td>6</td>
<td>Septicaemia</td>
</tr>
<tr>
<td>7</td>
<td>Hypertension</td>
</tr>
<tr>
<td>8</td>
<td>Cardiac diseases</td>
</tr>
<tr>
<td>9</td>
<td>Meningitis</td>
</tr>
<tr>
<td>10</td>
<td>Diarrhoeal diseases</td>
</tr>
</tbody>
</table>

Source: 2007 GHS
Increasing Prevalence

Possible factors

- Rural versus urban residents
- Increased sodium intake
- Increased caloric intake
- Decreased physical activity
- Obesity
- Psychological stress
## JNC 7 guidelines

### Classification of Blood Pressure (BP)*

<table>
<thead>
<tr>
<th>Category</th>
<th>SBP mmHg</th>
<th>DBP mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>and</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>120–139</td>
<td>or</td>
</tr>
<tr>
<td>Hypertension, Stage 1</td>
<td>140–159</td>
<td>or</td>
</tr>
<tr>
<td>Hypertension, Stage 2</td>
<td>≥160</td>
<td>or</td>
</tr>
</tbody>
</table>

*See Blood Pressure Measurement Techniques (reverse side)

Key: SBP = systolic blood pressure  DBP = diastolic blood pressure

### Principles of Hypertension Treatment

- Treat to BP <140/90 mmHg or BP <130/80 mmHg in patients with diabetes or chronic kidney disease.
- Majority of patients will require two medications to reach goal.
Background Info

- treatment
The purposes of this study is to:

- examine HPT management in Kintampo, B.A.
- Investigate presence of associated risk factors
Methods

- Study design: Cross-sectional
- Examine blood pressure trends, treatment regimen, at goal BP, age, gender, and obesity.
- Inclusionary criteria: HPT patients seen in the OPD at Kintampo Municipal Hospital
- Exclusionary criteria: diagnosed with HPT less than three months prior, or if their folder was missing and thus no information regarding previous BP measurements could be obtained.
Results

N = 20
Male participants = 3
Female participants = 17
Mean Age 57.6 ± 14.6
Mean BMI (kg/m²) = 26.2
# Obese persons (BMI > 30) = 5
Results

Medication Regimen

- Nifedipine 40%
- Nifedipine + Lisinopril 20%
- Nifedipine + Amlodipine 10%
- Lisinopril 10%
- Amlodipine + Lisinopril 10%
- Amlodipine + Amlodipine 10%
- Bendrofluazide + Amlodipine 10%
Results

Number of Participants at Goal BP

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>
Results

Blood Pressure Trends over Time

Blood Pressure (mm Hg)

Time

Systolic

Diastolic
More female participants than male
  - Difference in detection rates?
  - Due to chance?

Of the 5 participants who were obese, 4 were female.
  - Is obesity more prevalent among women than men?
  - Differences in compliance?
Discussion

- Medication regimen
  - 2 of 20 patients on thiazides were at goal BP
  - Others at goal were on calcium channel blocker ± B-Blocker or ACE-inhibitor. Cannot draw any conclusions

- Response to anti-hypertensives varies between different populations
  - First line treatment in African-Americans
  - Will treatment response be same in various African populations?
Discussion

- Reasons for some patients not reaching goal BP
  - Barriers in access to care
  - Education
  - Non-compliance to medication and lifestyle modification

- Limitations
  - Small sample size
  - Reliance on chart review for previous BP measurements
  - Language barrier
Conclusion

- HPT is increasing in prevalence especially with continued urban migration.
- More data is needed on clinician’s view of HPT management and reasoning of choosing one medication over another.
- Patient education is important and should have a greater focus during OPD visits.
References

Acknowledgments

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