BLOOD PRESSURE RESPONSES OF RICE DIET PROGRAM PATIENTS WITH MALIGNANT HYPERTENSION

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Background
• Malignant hypertension (MH) is severe hypertension with end-organ disease [1,2].
• MH was common before 1960 and the median survival was < 6 months [3].
• The residential Rice Diet Program (RDP) was designed to treat MH [4].
• RDP used a very low sodium (5 meq/d), low protein (~5% kcal), low fat (~5% kcal), high carbohydrate (~90% kcal) diet.
• MH patients were identified by papilledema and/or non-diabetic retinal hemorrhage and with a systolic BP (SBP) >170 mmHg.
• MH patients were identified between 1943-1955.

Methods
• Age at entry, gender, duration in RDP, BPs and urine Cl- (measure of low-sodium diet adherence) were compared by Wilcoxon test between Group A, those who stayed <384 days (the median duration of MH patients in RDP) and Group B, those who stayed ≥384 days.
• Multivariable linear regression was used to examine the association between these factors and the SBP change from entry to week 13.

Results

Table 1 Baseline characteristics

<table>
<thead>
<tr>
<th>N=596 (410M; 185F)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td>50</td>
<td>10.9</td>
</tr>
<tr>
<td>Duration, days</td>
<td>1164</td>
<td>2011</td>
</tr>
<tr>
<td>Systolic BP, mmHg</td>
<td>224</td>
<td>29.4</td>
</tr>
<tr>
<td>Diastolic BP, mmHg</td>
<td>131</td>
<td>19.6</td>
</tr>
<tr>
<td>BMI, kg/m²</td>
<td>25</td>
<td>5.8</td>
</tr>
<tr>
<td>Urine Cl-, mEq/L</td>
<td>72</td>
<td>51.5</td>
</tr>
</tbody>
</table>

Figure 1 Spline plots of BP changes predicted from linear regression

Group A, <384 days
Group B, ≥ 384 days

• BP dropped quickly in both groups and BP reduction was sustained in Group B (Figure 1).
• Group A stayed in RDP an average of 118 days. Group B stayed an average of 6 years.
• In a subset of patients with date of death data, Group A lived an average 1.1 year (N=122) and Group B 7.3 years (N=97) since first encounter in RDP.

Objectives
• To examine BP changes in MH patients
• To find factors associated with BP changes

Methods
• Age at entry, gender, duration in RDP, BPs and urine Cl- (measure of low-sodium diet adherence) were compared by Wilcoxon test between Group A, those who stayed <384 days (the median duration of MH patients in RDP) and Group B, those who stayed ≥384 days.
• Multivariable linear regression was used to examine the association between these factors and the SBP change from entry to week 13.

Conclusion
• Baseline SBP did not differ between groups but diastolic was higher, and BMI lower in Group A vs B (Figure 2).
• Group B patients had greater reductions in BPs and BMI (Figure 2).

References