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*A Prevalence of Elevated AARR in Rural Selangor*
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A Prevalence of Elevated ARR in Rural Selangor

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Abstract: The objective of this study was to determine the prevalence of elevated Aldosterone Renin Ratio (ARR) in Rural Selangor.

Methods: This was a cross sectional study involving subjects in Kuala Selangor and Tanjung Karang. The World Health Survey Kish tables were used to select eligible subjects (>18 years old) from each household. Their social demography, past medical history, anthropometric measurement and blood pressure were recorded. Blood were withdrawn for Aldosterone (ALD), Plasma Renin Activity (PRA), Creatinine (creat) and potassium (K). Raised ARR is defined as aldosterone/renin ratio of more than 20.

Results: A total of 392 subjects (age 55 +/- 14.1) were enrolled. Forty three (11%) subjects showed an ARR > 20. Out of those with raised ARR, 16 (38%) were hypertensive, 2 of which were not taking any anti-hypertensive drugs and 27 subjects (62.8%) were normotensive. Only 2 (4.7%) of them were hypokalamic, one of them being hypertensive. The main clinical characteristics of subjects with raised ARR are shown in Table 1.

Table 1: Demographic and Biochemical Parameters of Participants with ARR level >20, ARR < 20

<table>
<thead>
<tr>
<th>Parameters</th>
<th>ARR &gt; 20</th>
<th>ARR &lt; 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>56 ± 11.8</td>
<td>54 ± 14</td>
</tr>
<tr>
<td>Gender (male/female)</td>
<td>11/32</td>
<td>126/222</td>
</tr>
<tr>
<td>Hypertension</td>
<td>16</td>
<td>133</td>
</tr>
<tr>
<td>Duration hypertension (years)</td>
<td>9.6 ± 7.5</td>
<td>8.3 ± 7.5</td>
</tr>
<tr>
<td>BMI (kg/m²)</td>
<td>27.01 ± 6</td>
<td>26.8 ± 5.6</td>
</tr>
<tr>
<td>SBP (mmHg)</td>
<td>118±35</td>
<td>122.6 ± 39</td>
</tr>
<tr>
<td>DBP (mmHg)</td>
<td>73 ± 20.7</td>
<td>66.6 ± 28.1</td>
</tr>
<tr>
<td>Serum K+ (mmol/L)</td>
<td>4.04 ± 0.5</td>
<td>4.15 ± 0.5</td>
</tr>
<tr>
<td>Serum Creatinine (umol/L)</td>
<td>77.2 ± 25.7</td>
<td>81.5 ± 39.5</td>
</tr>
<tr>
<td>Serum ALD ng/dl</td>
<td>17.4 ± 11.6</td>
<td>9.8 ± 9.4</td>
</tr>
<tr>
<td>PRA (ng/ml/h)</td>
<td>0.48 ± 0.4</td>
<td>3.38 ± 5.5</td>
</tr>
<tr>
<td>ALD/PRA ratio (ng/dl per ng/ml/h)</td>
<td>41 ± 24</td>
<td>5.4 ± 4.7</td>
</tr>
</tbody>
</table>

Conclusion: The prevalence of raised ARR in Rural Selangor was 11%, and only 4.7% of them were hypokalemic.