Hypertensive nephropathy

- Granular cortical atrophy due to nephrosclerosis
  - Leads to cell death and Necrosis - decreased vascular perfusion - affects renal arteries
  - Loss of a glomerulus causes atrophy of the nephron

Regulation of Blood Pressure

\[ \text{BP} = \text{CO} \times \text{TPR} \]

Classification of Hypertension (BHS)

<table>
<thead>
<tr>
<th>Category</th>
<th>Systolic blood pressure (mmHg)</th>
<th>Diastolic blood pressure (mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal blood pressure</td>
<td>&lt;120</td>
<td>&lt;80</td>
</tr>
<tr>
<td>Normal blood pressure</td>
<td>&lt;130</td>
<td>&lt;85</td>
</tr>
<tr>
<td>High-normal blood pressure</td>
<td>130-139</td>
<td>85-89</td>
</tr>
<tr>
<td>Grade 1 Hypertension (mild)</td>
<td>140-159</td>
<td>90-99</td>
</tr>
<tr>
<td>Grade 2 Hypertension (moderate)</td>
<td>160-179</td>
<td>100-109</td>
</tr>
<tr>
<td>Grade 3 Hypertension (severe)</td>
<td>≥180</td>
<td>≥110</td>
</tr>
<tr>
<td>Isolated Systolic Hypertension (Grade 1)</td>
<td>140-159</td>
<td>&lt;90</td>
</tr>
<tr>
<td>Isolated Systolic Hypertension (Grade 2)</td>
<td>≥160</td>
<td>&lt;90</td>
</tr>
</tbody>
</table>
Differences in ET receptors

- **ET-A**
  - Located on **Smooth Muscle cells**
  - Mediate **vasoconstriction**
- **ET-B**
  - Located on **endothelial and smooth muscle cells**
  - **SMCs** mediate vasoconstriction
  - **ECs** mediate vasodilation

**Endothelin and Drug targets**

Extra information:

**K+ Channel openers/agonists**

- **Drugs:**
  - Minoxidil
  - Diazoxide
- **Mechanism of action:**
  - VSM hyperpolarisation
  - Reduction in VDCC activity
  - Reduction in \([Ca^2+]\)i
  - Increased relaxation