Renal Involvement in Tropical Diseases

6.19

Pathogenetic mechanisms in snake venom nephrotoxicity

Snake venom
- Direct toxicity
- Immunologic reaction
  - Disseminated intravascular coagulation
  - Hemolysis
  - Rhabdomyolysis
  - Cytokines Mediators
  - Mesangiolysis
  - Hemodynamic changes
  - Vasculitis
  - Renal ischemia
- Acute glomerulonephritis
- Acute tubular necrosis
- Glomerulonephritis

**FIGURE 6-39**
Pathogenetic mechanisms in snake venom nephrotoxicity. The immediate effect of exposure is attributed to direct hematologic toxicity involving the coagulation system and red cell membranes. The massive release of cytokines and rhabdomyolysis also contribute. Late effects may be encountered as a consequence of the immune response to the injected antigens.

Toxins of Plant Origin

**NEPHROPATHIES ASSOCIATED WITH EXPOSURE TO PLANT TOXINS**

<table>
<thead>
<tr>
<th>Toxin</th>
<th>Acute renal failure</th>
<th>Hypertension</th>
<th>Proteinuria</th>
<th>Hematuria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Djenkol bean</td>
<td>+++</td>
<td>+</td>
<td>+++</td>
<td>++++</td>
</tr>
<tr>
<td>Mushroom poisoning</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Callilepis laureola</td>
<td>+++</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semecarpus anacardium</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ <10%  +++ 10%-24%  ++++ 25%-49%  ++++++ 50%-80%

**FIGURE 6-40**
Nephropathies associated with exposure to toxins of plant origin. Note that with the exception of Djenkol bean nephrotoxicity, most plant toxins lead to acute renal failure due to hemodynamic effects [63-66].

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References


