Acute Renal Failure: Cellular Features of Injury and Repair

GROWTH FACTORS IN DEVELOPMENTAL AND RENAL RECOVERY

<table>
<thead>
<tr>
<th>Growth Factor</th>
<th>Expression Following Renal Ischemia</th>
<th>Effect of Exogenous Administration</th>
<th>Branching/Tubulogenic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HGF</td>
<td>Increased [97]</td>
<td>Enhanced recovery [103]</td>
<td>Facilitatory [109,110]</td>
</tr>
<tr>
<td>HB-EGF</td>
<td>Increased [100]</td>
<td>Undetermined</td>
<td>Facilitatory [111]</td>
</tr>
<tr>
<td>TGF-α</td>
<td>Unclear</td>
<td>Enhanced recovery [106]</td>
<td>Facilitatory [111]</td>
</tr>
<tr>
<td>IGF</td>
<td>Increased [101]</td>
<td>Enhanced recovery [107,108]</td>
<td>Undetermined</td>
</tr>
<tr>
<td>KGF</td>
<td>Increased [102]</td>
<td>Undetermined</td>
<td>Facilitatory [112]</td>
</tr>
<tr>
<td>DFGF</td>
<td>Undetermined</td>
<td>Undetermined</td>
<td>Facilitatory [114]</td>
</tr>
<tr>
<td>GDNF</td>
<td>Undetermined</td>
<td>Undetermined</td>
<td>Inhibitory for branching [115]</td>
</tr>
<tr>
<td>TGF-β</td>
<td>Increased† [98]</td>
<td>Undetermined</td>
<td>No effect [112]</td>
</tr>
<tr>
<td>PDGF</td>
<td>Undetermined</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Increase in endogenous biologically active EGF probably from preformed sources; increase in EGF-receptor mRNA
†Chemotacticants for macrophages and monocytes (important source of growth promoting factors)

FIGURE 16-24

Growth factors in development and renal recovery. This table describes the roles of different growth factors in renal injury or in branching tubulogenesis. A large variety of growth factors have been tested for their ability either to mediate ureteric branching tubulogenesis or to affect recovery of kidney tubules after ischemic or other injury. Interestingly, growth factors that facilitate branching tubulogenesis in vitro also enhance the recovery of injured renal tubules.

References

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