HIV AND KIDNEY

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INTRODUCTION AND AIMS

Renal disease is a common complication in HIV infected patients, about 5 to 10% of these will develop kidney dysfunction during the course of their disease.

The first association between HIV infection and kidney disease was made in 1984, when a group of investigators described histologically HIV-associated nephropathy (HIVAN). In some countries this is the most common histological finding on renal biopsies and the most common cause of chronic kidney disease in HIV + people. No information on the prevalence of HIV associated renal disorders has been reported in Portugal.

The aim of this study was to review the renal biopsies performed in HIV infected patients, received by our pathology department in the last 26 years.

RESULTS

Histologic lesions identified:

ICGN – Immune-complex glomerulonephritides
FSGS – Focal segmental glomerulosclerosis
TIN – Tubulointerstitial nephritides
HIVAN – HIV associated nephropathy
MCD – Minimal change disease

Clinical characteristics of the patients according to the histologic findings

<table>
<thead>
<tr>
<th></th>
<th>HIVAN (n=8)</th>
<th>FSGS (n=11)</th>
<th>MPGN (n=9)</th>
<th>PGN (n=7)</th>
<th>AA Amyloidosis (n=3)</th>
<th>TIN (n=9)</th>
<th>All patients (n=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male gender (%)</td>
<td>87.5% (7)</td>
<td>72.7% (8)</td>
<td>88.9% (8)</td>
<td>85.7% (6)</td>
<td>33.3% (1)</td>
<td>55.6% (5)</td>
<td>78.6%</td>
</tr>
<tr>
<td>Mean age (years)</td>
<td>35.6±8.0</td>
<td>34.1±7.6</td>
<td>37.3±5.4</td>
<td>32.8±9.0</td>
<td>37±2.9</td>
<td>40.9±13.4</td>
<td>37±9.8</td>
</tr>
<tr>
<td>Black race (%)</td>
<td>75% (6)**</td>
<td></td>
<td>18.2% (2)</td>
<td>0%</td>
<td>0%</td>
<td>44.4% (4)</td>
<td>25%</td>
</tr>
<tr>
<td>HBV infection (%)</td>
<td>0%</td>
<td></td>
<td>9.1% (1)</td>
<td>22.2% (2)</td>
<td>0%</td>
<td>33% (3)*</td>
<td>12.7%</td>
</tr>
<tr>
<td>HCV infection (%)</td>
<td>25% (2)</td>
<td>45.5% (5)</td>
<td>88.9% (8)**</td>
<td>42.9% (3)</td>
<td>33.3% (1)</td>
<td>44.4% (4)</td>
<td>44.6%</td>
</tr>
<tr>
<td>Intraovarian drug use (%)</td>
<td>33.3% (2/6)</td>
<td>55.6% (5/9)</td>
<td>88.9% (8)*</td>
<td>57.1% (4)</td>
<td>50% (1/2)</td>
<td>50% (4/8)</td>
<td>56.3%</td>
</tr>
<tr>
<td>AIDs (%)</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>HAART (%)</td>
<td>25% (2)</td>
<td>63.6% (7)</td>
<td>33.3% (2/6)</td>
<td>50% (2/4)</td>
<td>33.3% (1)</td>
<td>83.3% (5/6)</td>
<td>57.9%</td>
</tr>
<tr>
<td>Dialysis requirement (%)</td>
<td>62.5% (5)*</td>
<td>0%**</td>
<td>0%</td>
<td>0%</td>
<td>33.3% (1)</td>
<td>33.3% (3)</td>
<td>25%</td>
</tr>
<tr>
<td>CD4 count (cells/mm³)</td>
<td>3569</td>
<td>196±132.3</td>
<td>196±391.5</td>
<td>?</td>
<td>50±33.2</td>
<td>152±177.4</td>
<td>493±1209.7</td>
</tr>
<tr>
<td>RNA level (copies/ml)</td>
<td>530902±25008</td>
<td>222695±427068</td>
<td>278076.7±236271</td>
<td>?</td>
<td>3000003765</td>
<td>15762±16484.1</td>
<td>1677866.228841</td>
</tr>
<tr>
<td>Scr (mg/dl)</td>
<td>5.4±2.4**</td>
<td>1.6±1.0*</td>
<td>1.9±1.1*</td>
<td>1.5±1.3*</td>
<td>3.7±2.4</td>
<td>4.6±3.3</td>
<td>3.4±2.7</td>
</tr>
<tr>
<td>Proteinuria (g/24hours)</td>
<td>5.5±6.1</td>
<td>6.4±4.8*</td>
<td>4.4±3.5</td>
<td>4.4±2.1</td>
<td>9.3±4.1*</td>
<td>1.1±1.0*</td>
<td>4.8±5.4</td>
</tr>
<tr>
<td>Hematuria (%)</td>
<td>42.9% (3/7)</td>
<td>33.3% (3/9)</td>
<td>66.7% (6)</td>
<td>100%*</td>
<td>0%</td>
<td>62.5% (5/8)</td>
<td>51.8%</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.005; -* or -** inverse correlation

CONCLUSIONS

In our population, a variety of histological lesions were identified and no definitive clinical correlations were found. Consequently, it is not possible to identify or predict the HIV related nephropathy based on clinical criteria.

Renal biopsy is the gold standard for establishing the diagnosis.

Indications for renal biopsy:

- Proteinuria
- Nephrotic syndrome
- ARF
- RPRI
- Hematoproteinuria

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