The use of daily home hemodialysis (HHD) has been expanding over the past years due to the development of portable hemodialysis systems specifically designed for home use as the NxStage's System One®, which employs a low dialysis flow rate. Although this machine simplifies the HHD procedures, it could compromise the dialysis dose [1-3].

The aim of this study was to examine the dialysis doses achieved in patients undergoing low-flow dialyse short daily HHD.

Observational study which included all the patients undergoing daily HHD with NxStage One machine attended at our dialysis center.

Serum measurements before and after dialysis were performed in 203 dialysis sessions in 13 patients, including urea, creatinine, phosphate, uric acid, and ß2microglobulin (ß2M).

Total dialysate collection was also performed in 60 sessions.

RESULTS

Dialysis doses achieved

<table>
<thead>
<tr>
<th>HHD (203 sessions)</th>
<th>Kt/V (up)</th>
<th>0.7 ± 0.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kt/V std</td>
<td>2.39 ± 0.54</td>
<td></td>
</tr>
<tr>
<td>URR (%)</td>
<td>39.2 ± 8.1</td>
<td></td>
</tr>
<tr>
<td>Weekly URR (%)</td>
<td>25.5 ± 5.1</td>
<td></td>
</tr>
<tr>
<td>TAC</td>
<td>17.9 ± 6.8</td>
<td></td>
</tr>
<tr>
<td>nPCR (g/kg/d)</td>
<td>39.7 ± 15.4</td>
<td></td>
</tr>
<tr>
<td>nPCR (g/kg/d)</td>
<td>1.3 ± 0.6</td>
<td></td>
</tr>
</tbody>
</table>

*Per dialysis session

Rate of target achievement

Dialysis does achieved

- Standard Kt/V, TAC and nPCR averaged 2.39±0.54, 39.7±15.4 and 1.3±0.6 g/kg/d, respectively.
- Standard Kt/V ≥ 2.0 was achieved in 88% of the sessions, increasing to 91% when only patients without residual renal function were studied.
- The mean weekly reduction rate of ß2M was 258%, which is similar than usually achieved with on-line hemodiafiltration thrice weekly [4].
- The weekly solute mass elimination of phosphate and ß2M averaged 3.47±0.97 and 0.74±0.25 g weekly, which is similar than usually achieved with on-line hemodiafiltration thrice weekly [4].
- Adequate protein intake assessed by nPCR was achieved in 70% of patients, which is greater than usually achieved with conventional hemodialysis [5].

CONCLUSIONS

Low-flow dialyse short daily HHD can be used to achieve adequate dialysis dose, being associated with high protein intake assessed by nPCR.

REFERENCES