PHARMACOKINETIC MONITORING OF TACROLIMUS IN RENAL TRANSPLANT PATIENTS

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BACKGROUND AND IMPORTANCE:
Tacrolimus (TAC), a calcineurin inhibitor, is indicated in renal transplantation, and its monitoring is important due to its pharmacokinetic variability.

AIM AND OBJECTIVES:
To describe the demographic, clinical and pharmacokinetic characteristics of patients in immediate post-renal transplantation in treatment with TAC.

MATERIAL AND METHODS:
Retrospective observational study carried out in a Hospital with all patients with renal transplantation between September 2019-September 2021.

Variables (collected from GestLab® and OrionClinic12®):
- Demographic (sex, age)
- Anthropometric (weight, height, BMI)
- Monitoring-related (TAC concentration corresponding to the 1st monitoring and at which optimal levels are reached, time elapsed from the start of TAC to the 1st level and the optimal level, number of determinations)
- Clinical (creatinine (Cr) and renal clearance (ClCr) on the day of transplantation and day +7)
- Pharmacotherapeutics (antibody administered)

RESULTS:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Patients</th>
<th>Mean TAC dosing regimen until 1st monitoring</th>
<th>Mean total dose of TAC up to 1st monitoring</th>
<th>ConTAC at 1st monitoring</th>
<th>Determinations to reach target level</th>
<th>Mean time to reach target level</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR (Basiliximab)</td>
<td>18 (51.43%)</td>
<td>7.25mg/12h</td>
<td>33.47±13.42mg</td>
<td>22.89±8.04ng/mL</td>
<td>3</td>
<td>6 days</td>
</tr>
<tr>
<td>HR (Thymoglobulin)</td>
<td>17 (48.57%)</td>
<td>6.14mg/12h</td>
<td>19.29±8.03mg</td>
<td>14.59±8.87ng/mL</td>
<td>3</td>
<td>7 days</td>
</tr>
</tbody>
</table>

Transplant day → Cr: 5.9±2.7mg/dL, ClCr: 10.73±5.14mL/min  Day + 7 → Cr: 3.48±2.1mg/dL, ClCr: 26.8±19.76mL/min

CONCLUSION:
Pharmacokinetic monitoring of TAC is useful in immediate renal transplantation, since a high percentage of patients present concentrations outside the target therapeutic range in the 1st determination. Further studies are needed to optimize the initial TAC dosage in this type of patients.

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