Definitions of calculated Transplantability Score and calculated combined PRA

A donor pool, based on 2000 recently HLA typed deceased donors registered in Scandiatransplant, has been made. The pool forms the basis of the Calculated Transplantability Score and calculated combined PRA.

<table>
<thead>
<tr>
<th>Combined PRA</th>
<th>Transplantability Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA information used in calculation</td>
<td>HLA antibody summary (historical and current antibodies) on the patient. HLA-A, B, C, DRB1 and DQB1 antibodies</td>
</tr>
<tr>
<td>AB0 used in calculation</td>
<td>No</td>
</tr>
<tr>
<td>Result based on the donor pool</td>
<td>Percentage of donors which the patient has antibodies against.</td>
</tr>
<tr>
<td>Describes the probability of finding a suitable donor</td>
<td>No, AB0 is not included</td>
</tr>
<tr>
<td>When is calculation done</td>
<td>Automatically when the list of identified antibodies is changed</td>
</tr>
</tbody>
</table>

1. Combined PRA

The calculated combined PRA is based on the HLA antibody summary on the patient and doesn’t take AB0 into account.

It gives you a combined Class I + II PRA, which is the percentage of donors that the patient has antibodies against.

A ‘real’ cell panel often represents as many antigens as possible, thus the distribution of antigens is not comparable to the real population. As the calculated combined PRA is based on a large donor pool it doesn’t have that disadvantages.

Furthermore, a combined PRA gives you a probability of the risk of a positive crossmatch. A patient could have a Class I PRA = 50% and Class II PRA = 38%, but a combined PRA = 86%.

Example: PRA = 80%

The patient has antibodies against 80% of the donors

- 0,80 x 2000 = 1600 donors
- Will not have antibodies against 400 donors, but then AB0 has not been taken into consideration!
2. Transplantability Score (TS)

The TS is based on split level HLA typing, defined acceptable HLA mismatches and ABO. It gives you the percentage of donors which are ABO identical and have HLA split level antigens that are acceptable to the recipient (recipient HLA + acceptable mismatches). Compared to the PRA based evaluations the calculation has the advantage of taking both HLA as well as ABO into consideration, resulting in a more realistic estimate of finding a suitable deceased donor kidney for the individual patient and especially for patients with rare ABO types.

Example: TS = 2%

The patient could get at suitable graft from 2% of the donors

➔ 0.02 x 2000 = 40 donors

If you want to look at the probability of getting the patient transplanted, one must look at a certain donor pool size/time period.

➔ With around 500 donors per year in Scandiatransplant:

\[(\text{TS/100}) \times \text{number of donors per year} = \text{number of donors matching within 1-year (2016)}\]

\[(2/100) \times 500 = 10 \text{ matching donors per year}\]

How to find and use the calculations in YASWA are described in the following manual:


October 31st 2017