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I have no financial relationships to disclose within the past 12 months relevant to my presentation.

My presentation does not include discussion of off-label or investigational use (if yes, list company and nature of relationship – e.g. grants, advisory board, etc.).
New tool to analyse confounding factors in kidney graft outcome: a DİVAT data base study
(Validated data base in transplantation)

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The Cox multiple regression analysis

Estimates the effect of each independent Covariate (age, sex, etc.) on the speed to reach from the Initial event the final one.

Transplantation

Covariates

Graft failure (+/- death)
Beyond a new approach: a multistate semi-Markov study

Estimates the effect of each independent covariate (age, sex, etc.) on the risk and on the speed to reach several competitive events.

Covariates

Transplantation

Graft failure

Function Degradation

Death with function

Transition

Competition

Transition

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Population of the study (n=985)

- **DÉVAT** limited to the Nantes centre according to the high exhaustivity of the graft function (Clearance of creatinemia) records at each outpatient examination during the follow-up

- First kidney graft

- Consecutive

- Between 01/01/1996 to 01/09/2006

- Adults

- Clinical visit at 3 months with a eGFR (MDRD calculation CI)

839 patients
## Description of the covariates

The same covariates for the two approaches

<table>
<thead>
<tr>
<th>Covariates</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient gender (male)</td>
<td>62%</td>
</tr>
<tr>
<td>Donor gender (male)</td>
<td>64%</td>
</tr>
<tr>
<td>Recipient age</td>
<td>49.9 (18-79)</td>
</tr>
<tr>
<td>Donor age</td>
<td>47.7 (5-84)</td>
</tr>
<tr>
<td>Inc. HLA-A-B-DR</td>
<td>3.3 (0-6)</td>
</tr>
<tr>
<td>Cold ischemia time (h)</td>
<td>23.8 (1-50)</td>
</tr>
<tr>
<td>Delayed graft function (d)</td>
<td>6.6 (1-67)</td>
</tr>
<tr>
<td>Anti T PRA (%)</td>
<td>4.3 (0-100)</td>
</tr>
<tr>
<td>Anti IL2 R induction</td>
<td>40%</td>
</tr>
</tbody>
</table>
The COX model: RESULTS

Transplantation

DGF

Recipient Age

Graft failure or Death
The multi-state approach: CONCLUSION

The multistate approach is a more complex model than the COX model, but allows to increase the knowledge of the graft outcome fitting more with the real life
The multi-state approach: Semi Markov RESULTS

- **Risk of graft failure at 5 years**
  - 17% if Inc. HLA >=4
  - 8% if Inc. HLA < 4

- **Risk of death at 5 years**
  - 5% if Inc. HLA < 4
  - 2% if Inc. HLA >=4

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