



Immunosuppressant drug level monitoring in pediatric transplantation: survey of practices

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INTRODUCTION

Therapeutic Drug Monitoring (TDM) is considered as cost-effective for the management of immunosuppressants in transplantation to enhance efficacy and prevent rejection.

TDM may be performed based on trough or peak levels, or area under the curve (AUC) measurement. The purpose of this survey was to describe immunosuppressive and TDM practices in pediatric solid organ transplantation.

MATERIALS AND METHODS

- **Design:** International survey using a standardized questionnaire to evaluate TDM practice by mailing during the first quarter 2011.
- **Setting:** Pediatric liver and kidney transplantation centers.
- **Main outcome measures:** Induction and baseline treatments. TDM practices (concentration or AUC, analytical methods, clinical decision support tools and CYP3A genotyping).

RESULTS

Responder

- ✓ 10 pediatric centers answered
- ✓ North America: 6 / Europe: 4
 - 8 Liver transplantation
 - 2 Kidney transplantation
- ✓ 5 (50%) centers performed more than 20 solid organ transplantations/year (Figure 2).

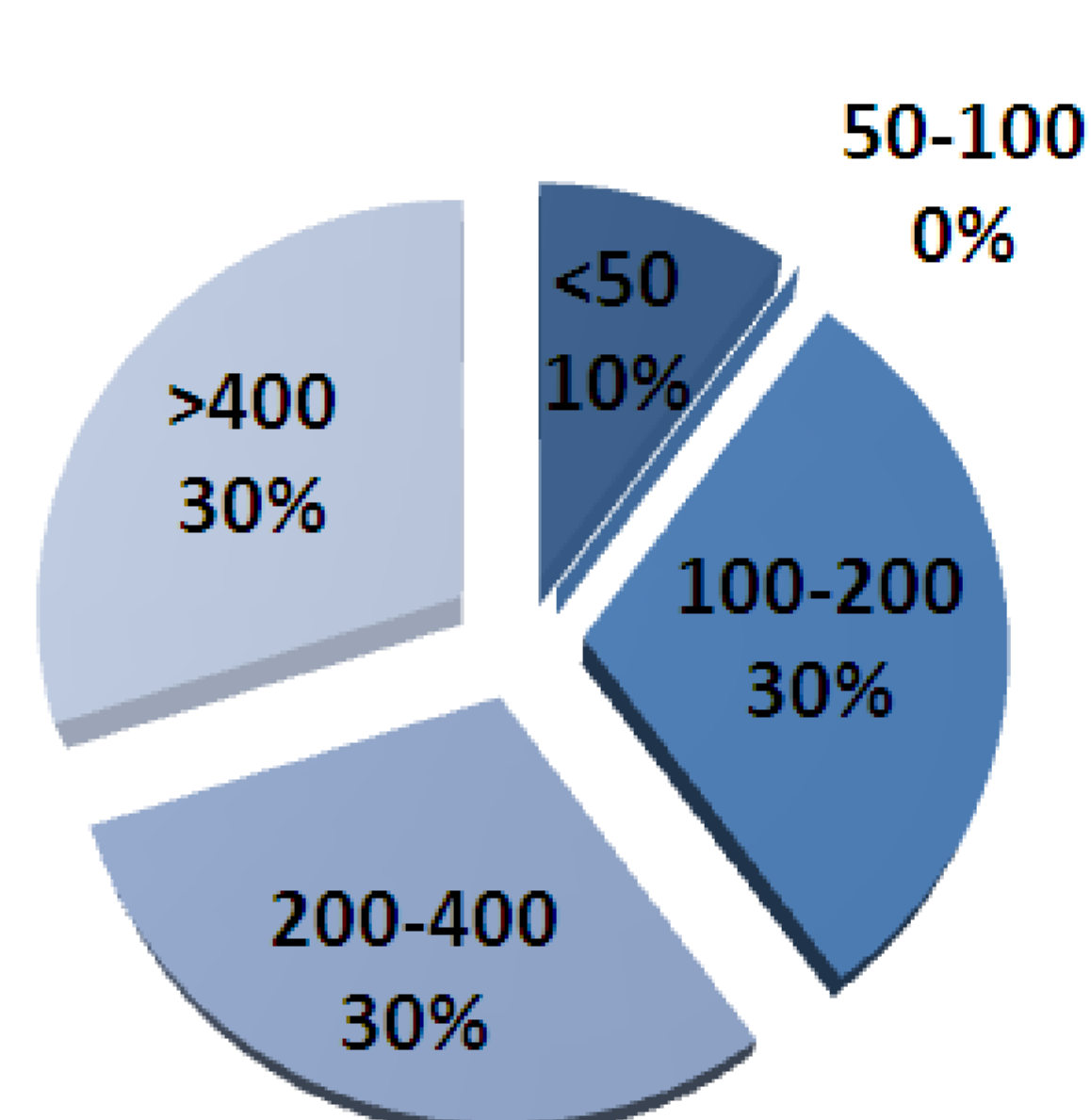


Figure 1. Number of pediatric beds

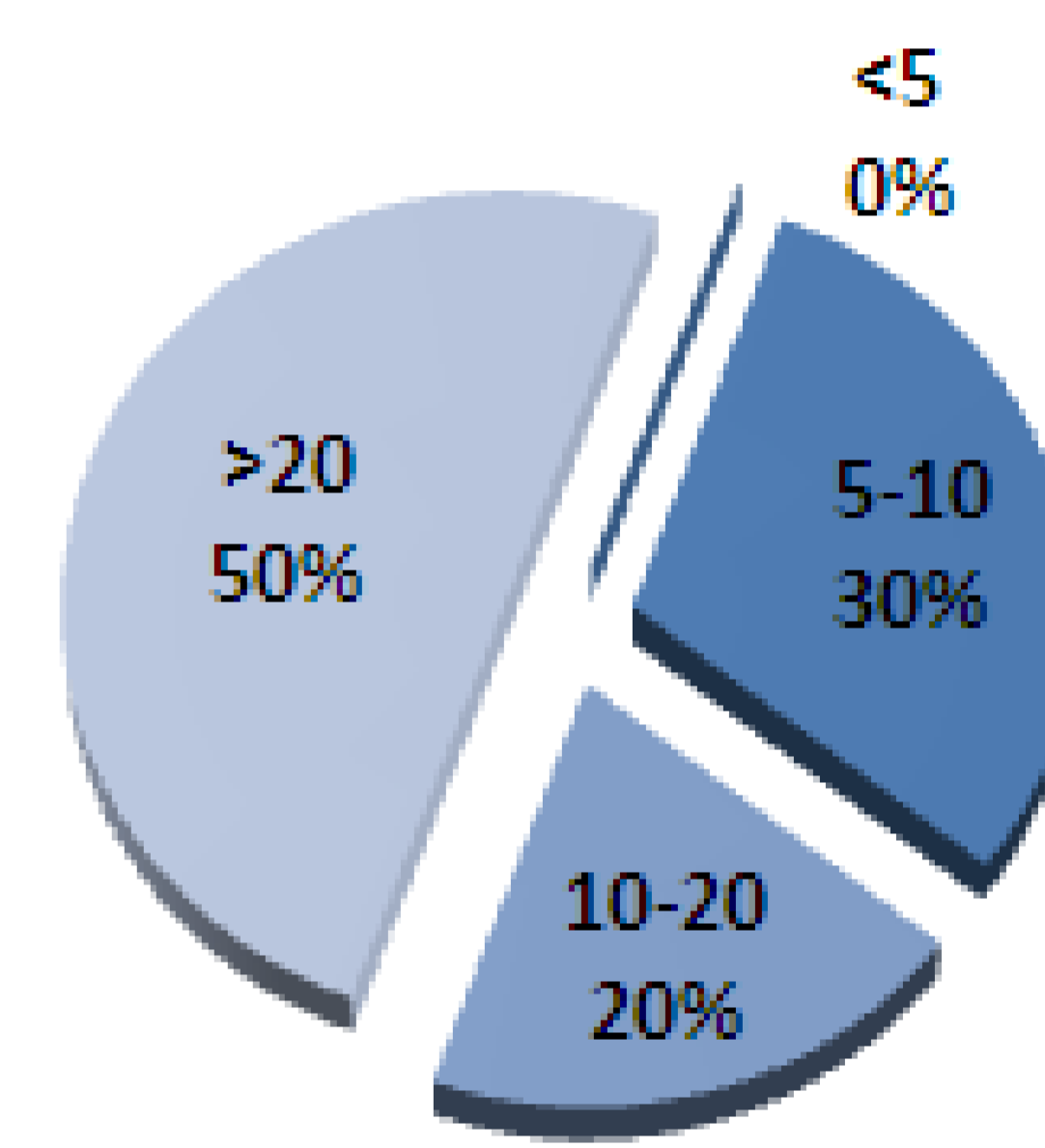
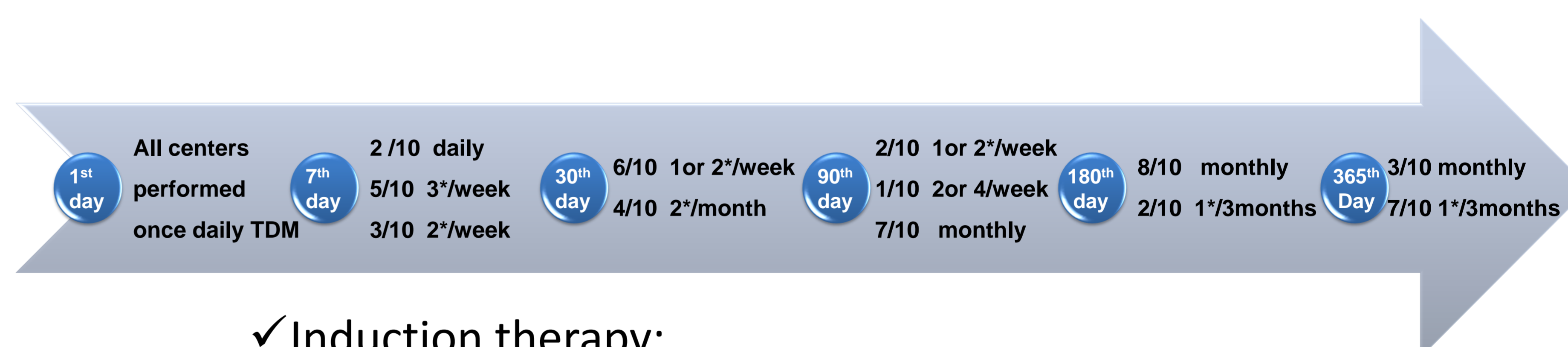
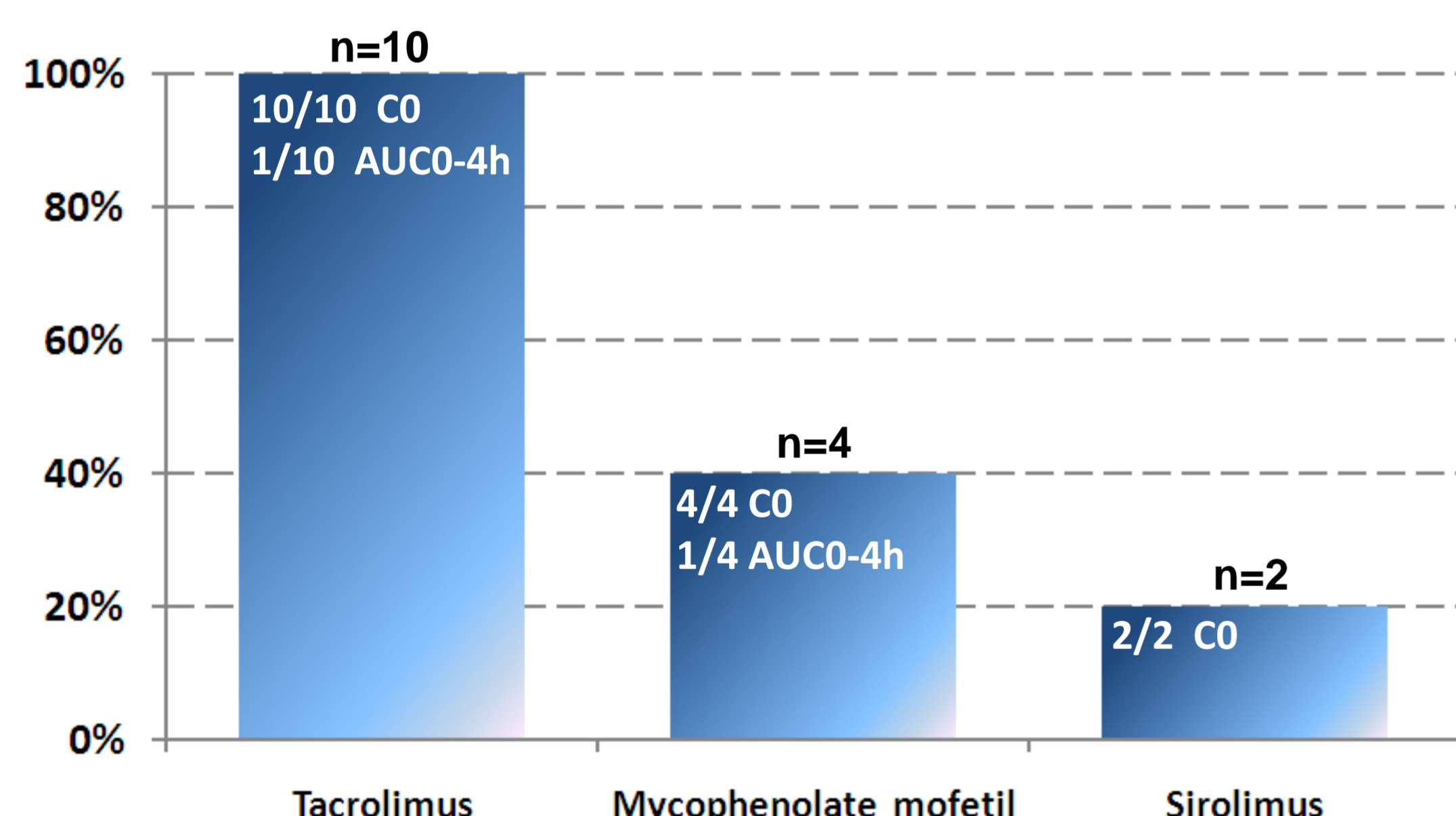


Figure 2. Number of transplantations per year

Treatments and TDM schedule

Baseline immunosuppression and TDM practices



- ✓ Induction therapy:
 - patient with low/normal risk : 7/10 centers used basiliximab
 - patient with high risk : 3/10 basiliximab and 3/10 anti-thymocyte globulin.
- ✓ Only one center used peak levels (C2) for ciclosporine

Clinical support

- ✓ Present in 7 centers as written guidelines (5) and/or level interpretation by TDM specialist (4).
- ✓ No center had an integrated computerized physician order entry system.

Genotyping

- ✓ Only one center occasionally used CYP3A genotyping for tacrolimus when desired levels could not be reached.

DISCUSSION, CONCLUSION

Practices were quite similar in the ten evaluated pediatric liver and kidney transplantation centers. Analytical methods were usually unknown. Even if AUC measurement or genotyping are available, immunosuppressant TDM remains based on trough levels and written guidelines.

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