Evaluation of the impact of Tacrolimus-based immunosuppression in Heidelberg liver transplant cohort (HDTACRO study)

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Background

- Tacrolimus-based drugs are of the mostly used immunosuppressants after liver transplantation (LT).
- **Therapy adherence** and **dose adjustment** play a key role in achieving the desired blood level and therefore treatment success.
- The first study which prospectively evaluates the patients' therapy adherence as well as the need for adjustment of therapeutic doses of different oral Tacrolimus based regimen after LT.

Study Design

- A **pilot**, prospective, noninterventional and **non-randomized** cohort (ClinicalTrials.gov: NCT04444817).
- Patients treated with various oral Tacrolimus-based regimen based on local SOPs (Prograf® and Envarsus®).
- **Fifty** consecutive patients receiving *de novo* LT
- Patients' **therapy adherence**, number of required **dose adjustments** for achieving the target trough level, and **efficacy and safety** data

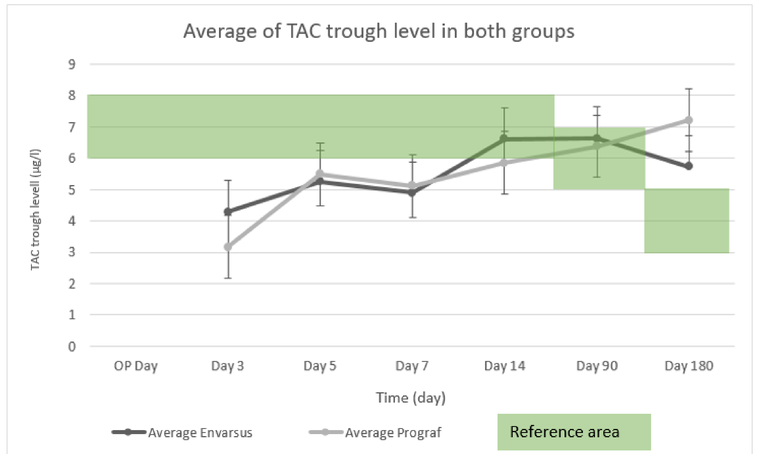
Results

- 30 patients once daily Tacrolimus (Envarsus®)
- 20 patients twice daily Tacrolimus (Prograf®).

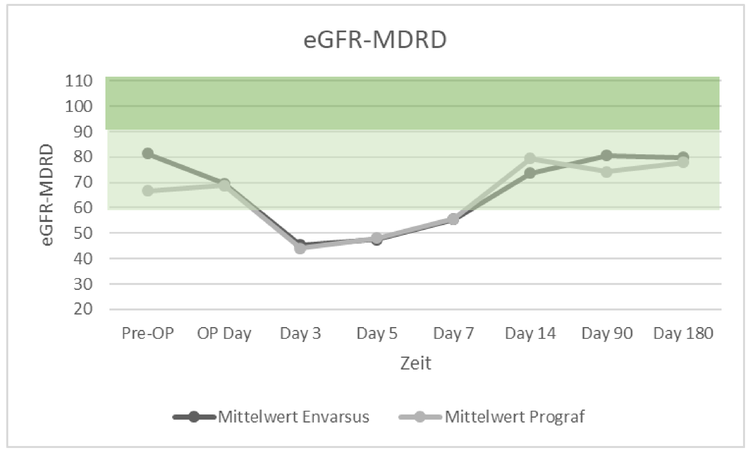
Comparison of demographic and preoperative data of study participants. LCP-TAC (extended release Tacrolimus): Envarsus®; IR-TAC (immediate release Tacrolimus): Prograf®

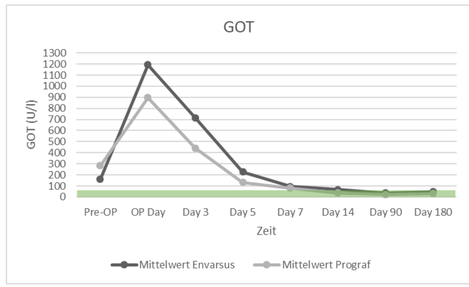
Properties	Total (n=50)	LCP-TAC (n=30)	IR-TAC (n=20)	p-value
Male	24 (48%)	14 (46,6%)	10 (50%)	0,52
Age average (year)	54	53,2	55	0,44
Age ≤50 years	14 (28%)	11 (36,6%)	3 (15%)	0,08
Age of donor ≤50 years	16 (32%)	10 (33,3%)	6 (30%)	0,69
BMI ≤30 kg/m²	34 (68%)	20 (66,6%)	14 (70%)	0,52
MELD ≤15	23 (46%)	14 (46,6%)	9 (45%)	0,56

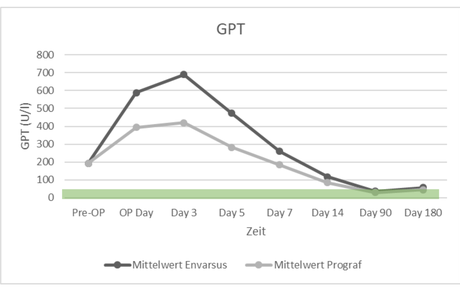
- **Therapy adherence: 100% in both groups**
- **Number of dose adjustments per patient: more than 5 times in both groups**
- Mean Tacrolimus trough level at 6-months after LT
  - Prograf® group: 7.5±7 µg/l (1.5-fold higher than the upper limit)
  - Envarsus® group: 5.1±2 µg/l (slightly higher than the therapeutic range)

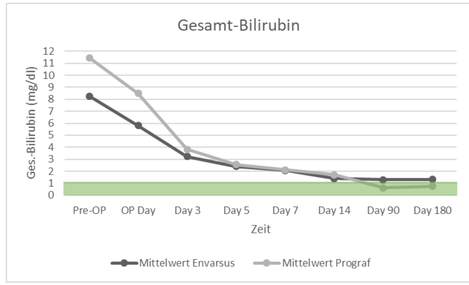


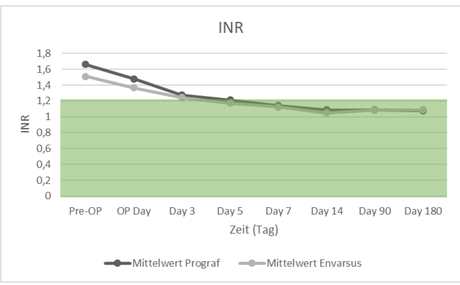
- Treatment conversion to cyclosporine:
  - 4 patients (13.3%) in Envarsus® group
  - 2 patients (10.0%) in Prograf® group
- No acute rejection
- Retransplantation during follow-up time only in one patient in Envarsus® group and 0 patients in Prograf® group
- Mortality in 2 patients treated with Envarsus® and 0 patients in Prograf® group











Conclusion

- Acceptable stability of Tacrolimus trough levels
- Safe for immunosuppressive therapy after liver transplantation
- Improvement of renal function
- Normalization of liver function
- No inferiority in patient adherence, number of dose adjustments and safety in once-daily versus twice-daily Tacrolimus administration

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