

Tolerance to Exercise in High-Altitude in Organ Transplant Recipients

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Introduction

- New questions arise on physical possibilities in organ transplant recipients: are physically demanding goals equally feasible?
- Aims: evaluate the physical response, incidence of acute mountain sickness and tolerance to strenuous PA of various organ transplant recipients compared to non-transplanted controls.

Methods

- 12 Tx-recipients were selected to climb Mt. Kilimanjaro (2 heart-, 2 lung-, 2 kidney-, 4 liver-, 1 stem cell- and 1 small bowel-Tx).
- Controls were members off the medical team and accompanying family members (n=14).
- Cardiopulmonary parameters and symptoms of acute mountain sickness were recorded twice daily. Capillary blood analyses were performed 3 times during the climb and once after return.

Results

- 11 Tx-recipients and all controls started the summit attempt and reached >5000m.
- 8 (73%) Tx-participants and 11 (93%) controls reached the summit (5895m).
- Cardiopulmonary parameters (see figures 1a,b,c) and altitude sickness scores did not significantly differ between Tx-participants and controls.
- Capillary blood analysis indicated slightly higher levels of metabolic acidosis and subsequent compensation in Tx-participants versus controls.



Heart frequency

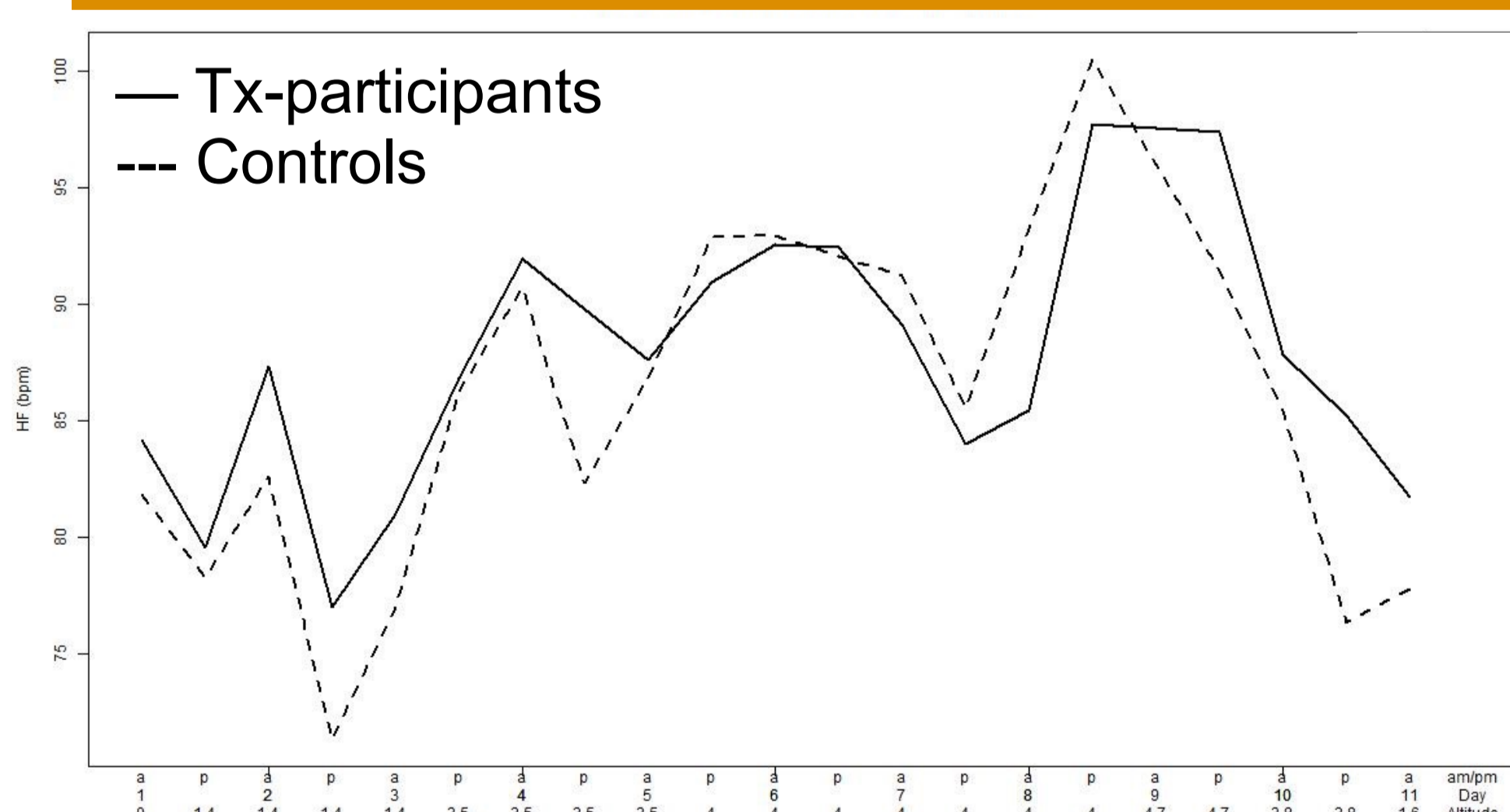


Figure 1a. Course of heart frequency over time.

Blood pressure

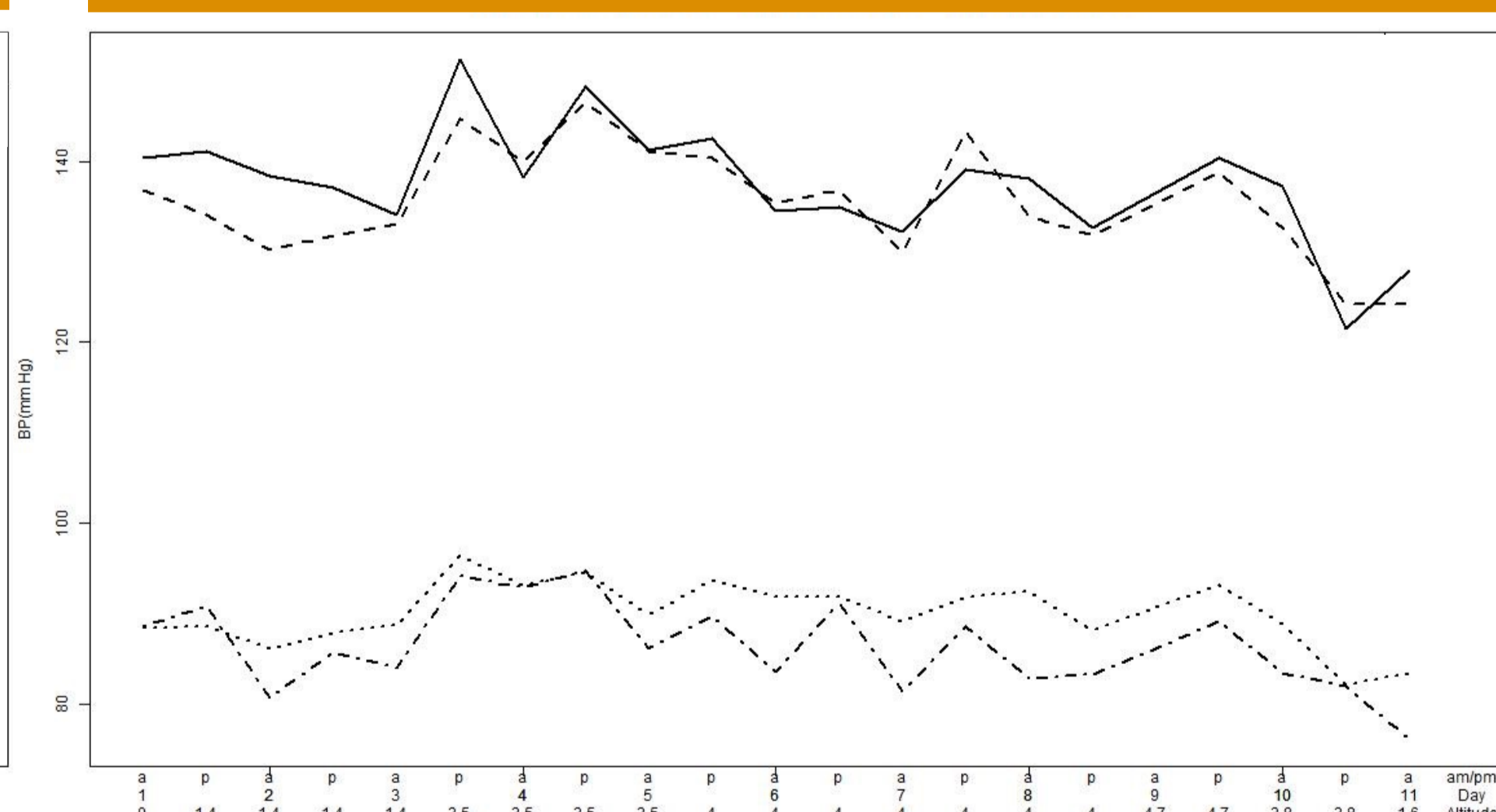


Figure 1b. Course of blood pressure over time.

Oxygen saturation

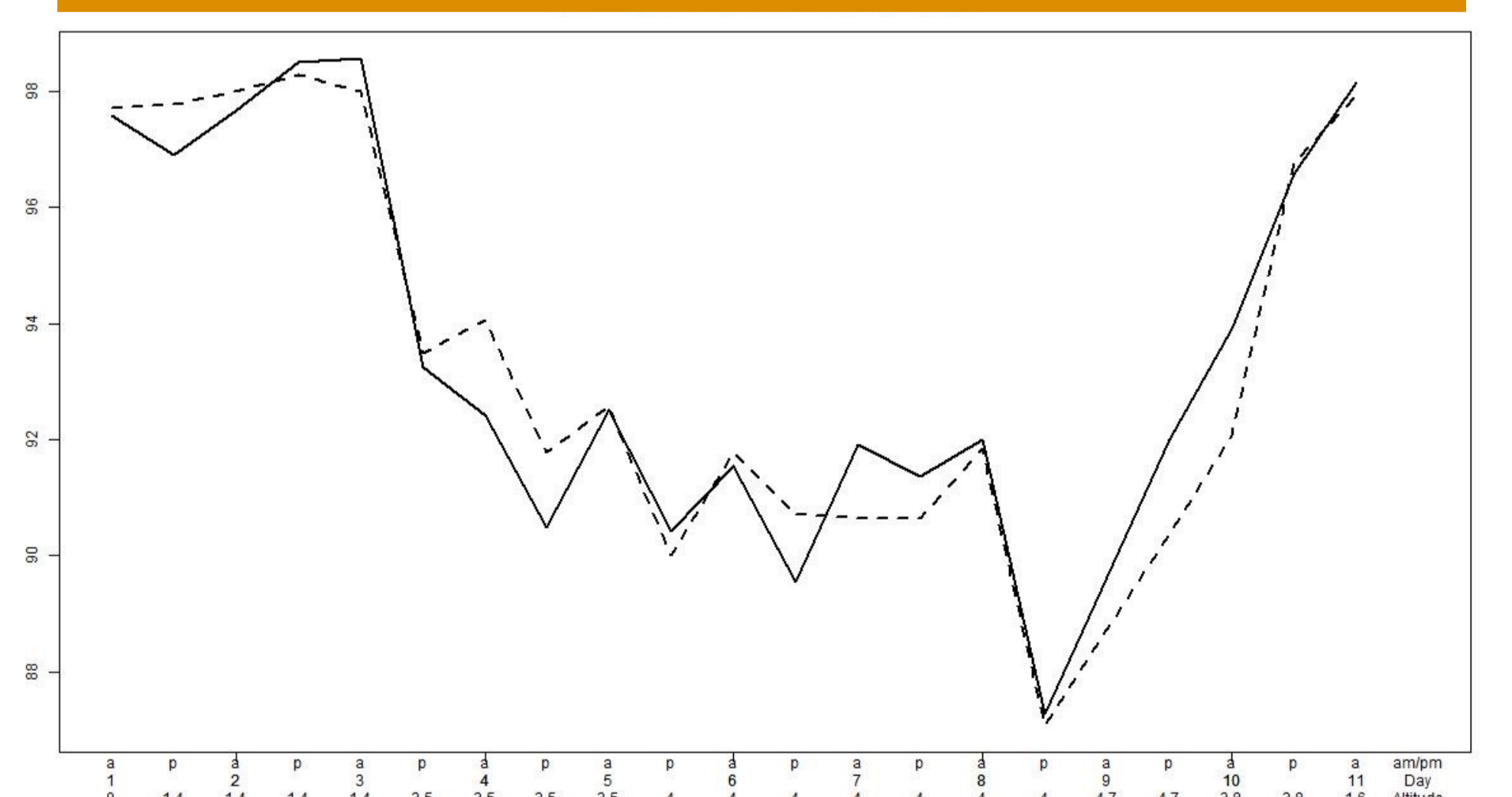


Figure 1c. Course of oxygen saturation over time.

Conclusion

Tolerance to strenuous physical activity and feasibility of a high-altitude expedition is comparable in well-selected organ transplant recipients after various types of transplantation and non-transplanted controls.