



AT THE FOREFRONT

**UChicago
Medicine**

Piotr Witkowski Lab

Islet transplantation allows to restore insulin independence in patients with type 1 diabetes and kidney allograft

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Islets after kidney transplantation (IAK) at University of Chicago (UCM)

- Islet transplantation is still not reimbursed by insurance due to regulatory hurdles
- IAK is only available within the frame of clinical trial, but the number of cases is very restricted due to limited research funding ,

- N=5, age 50 (42-59), 3F/2M
- HbA1c **8.6** (6.8-10.2)

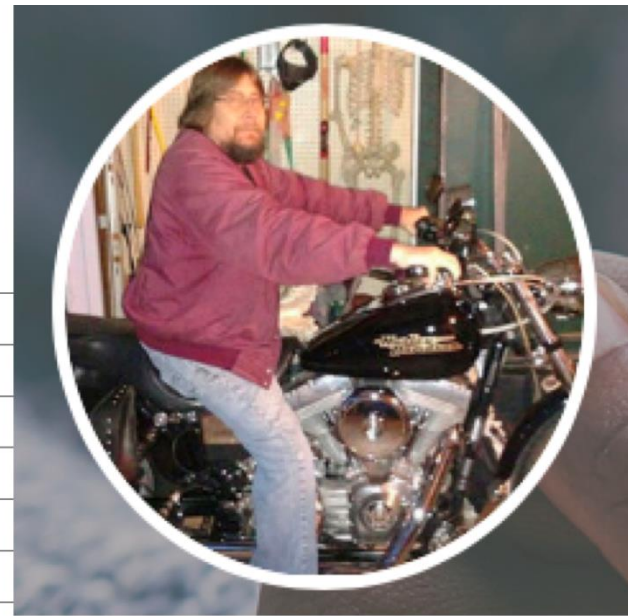
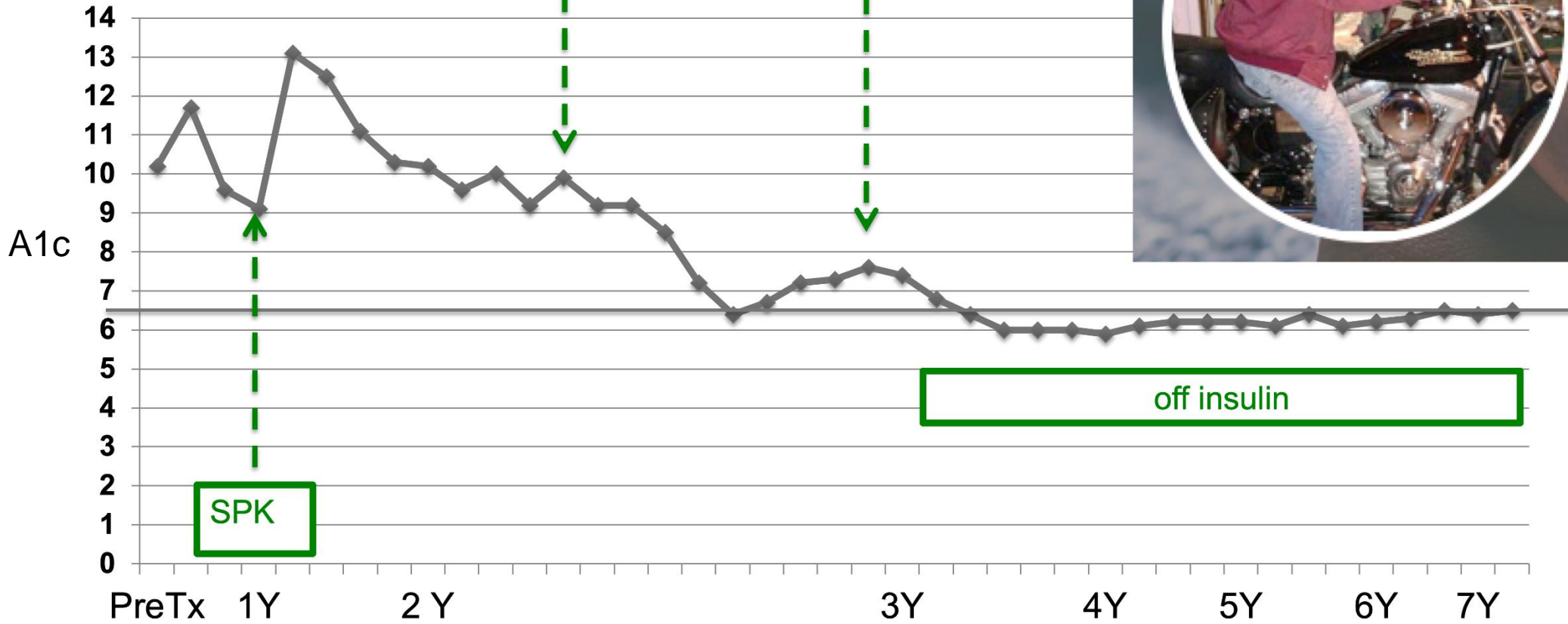
Basiliximab for induction, tacro+ MPA for maintenance
Etanercept in peri tx

Results

- all of them achieved insulin independence, with HbA1c<6
for over: 4Y (2ITX) ,
3.5Y, 2.5Y, 13M, 9M (1ITx)

- stable kidney graft function
- no complications related to Islet Tx procedure

ESRD, T1DM, Severe PVD

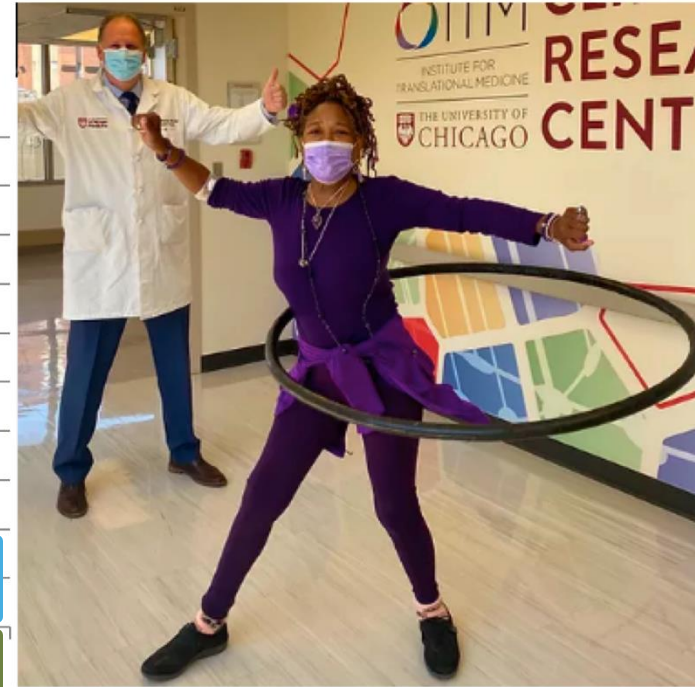
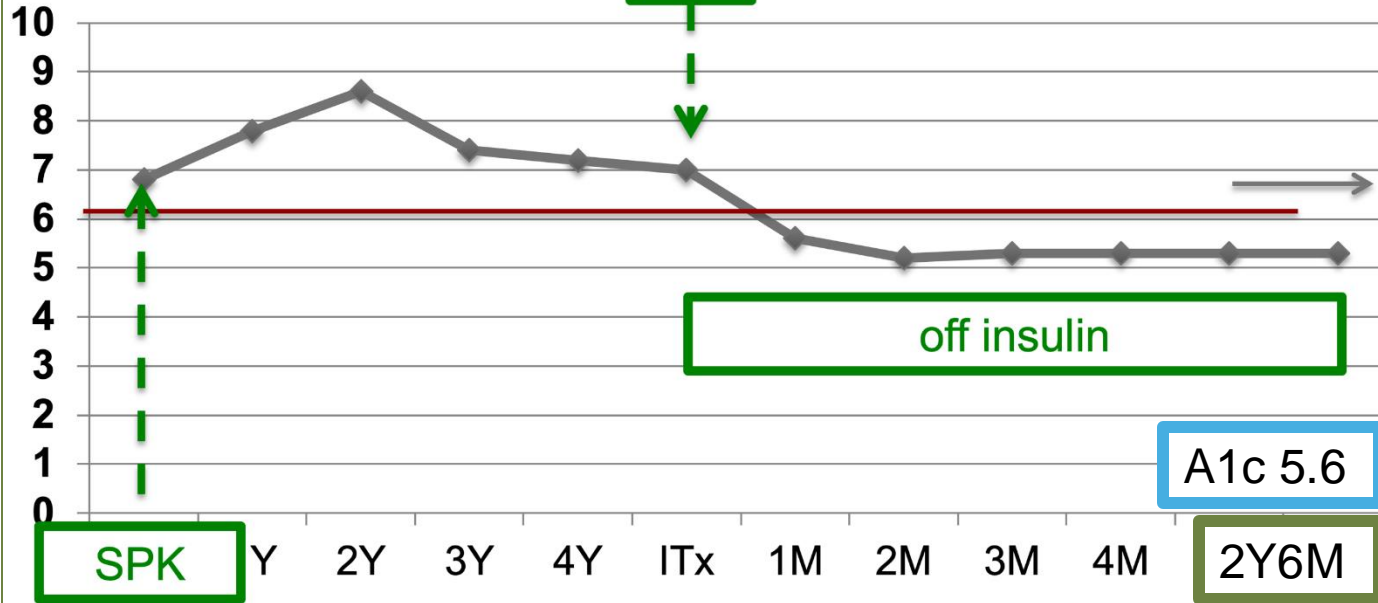


- 1) IEQ 300k. IEQ/kg 4,100
- 2) IEQ 535k IEQ/kg 7,000

Creatinine stable 1.0- 1.2
PRA=0

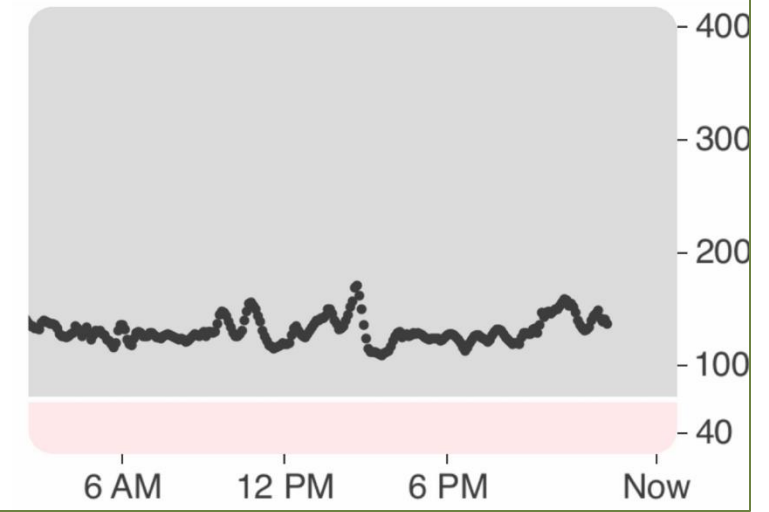
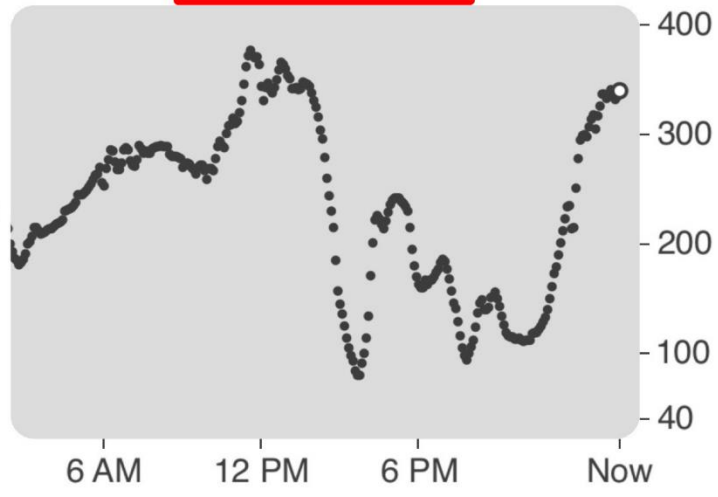
No exercise, gained 10 kg recently, has insulin resistance due steroids/prograf, needs a lot of insulin, a lot of islets (T2DM like)- > metformin

HbA1c



before ITx

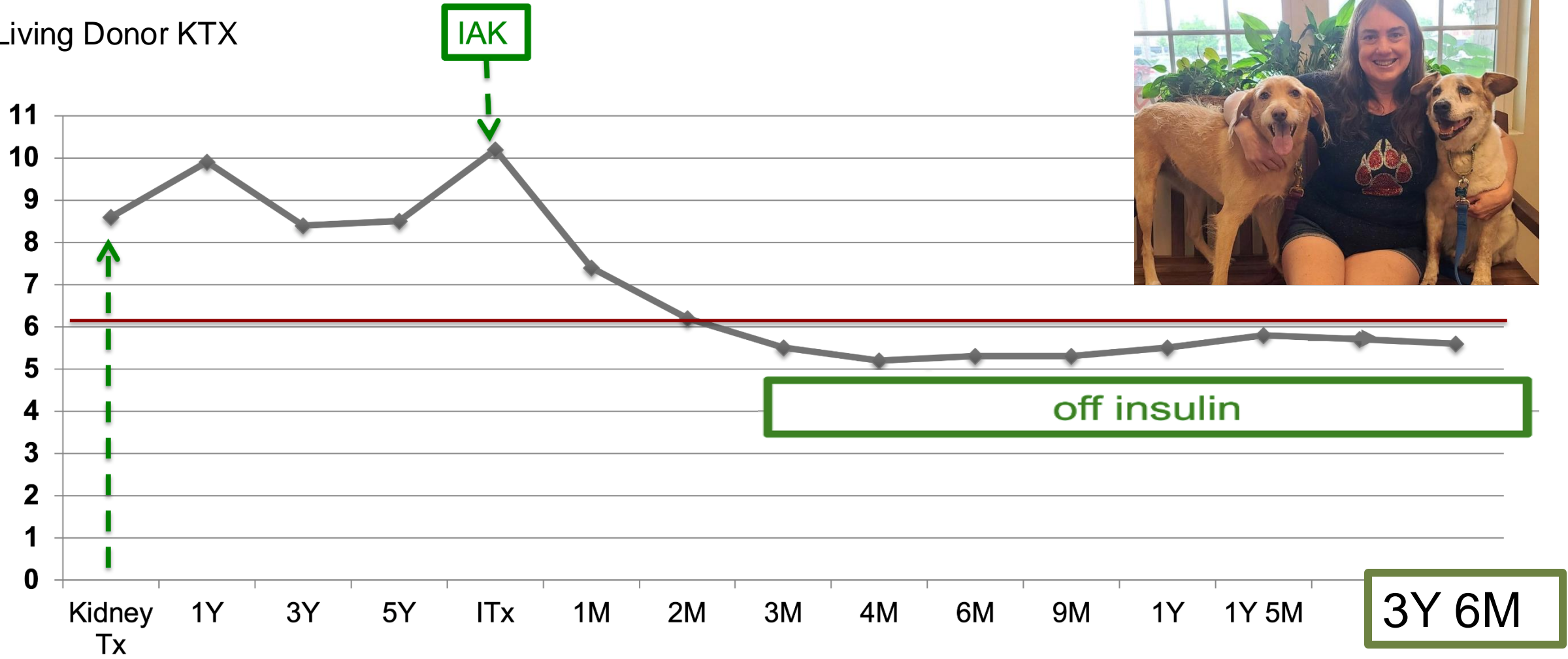
after ITx



59 years old,
SPK (kidney and pancreas transplantation)
Lost pancreas Tx right away

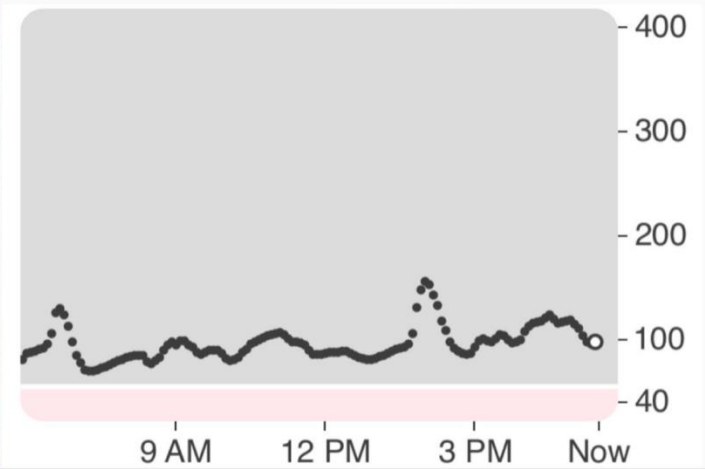
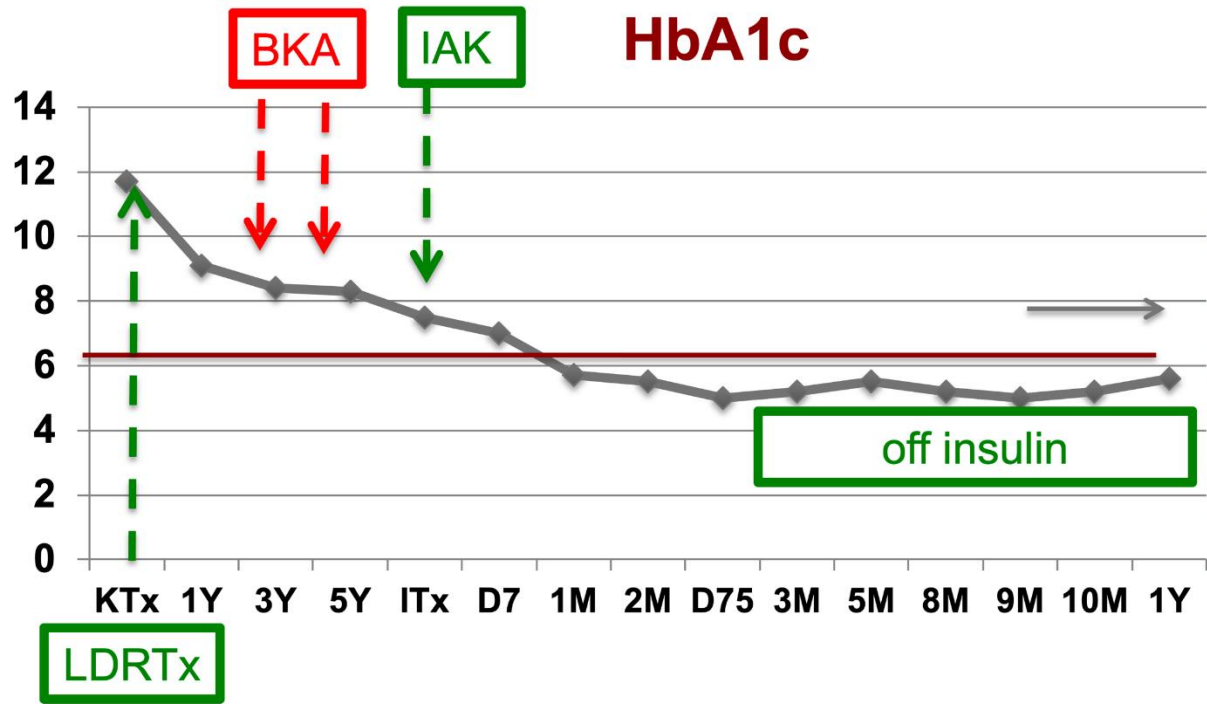
IEQ 370k, IEQ/kg 5,700

Living Donor KTX



Tac+ MPA+ Pred 5mg
Creatinine stable 1.2-1.4
PRA=0

IEQ 400k, IEQ//kg 5,600



Not SPK/PAK candidate- chronic hypotension, PVD,

bilateral BKA

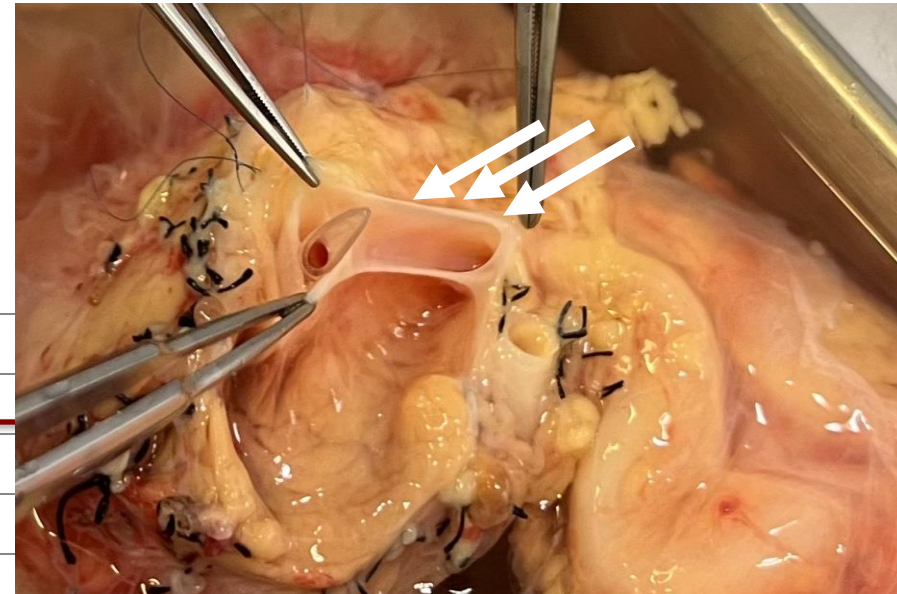
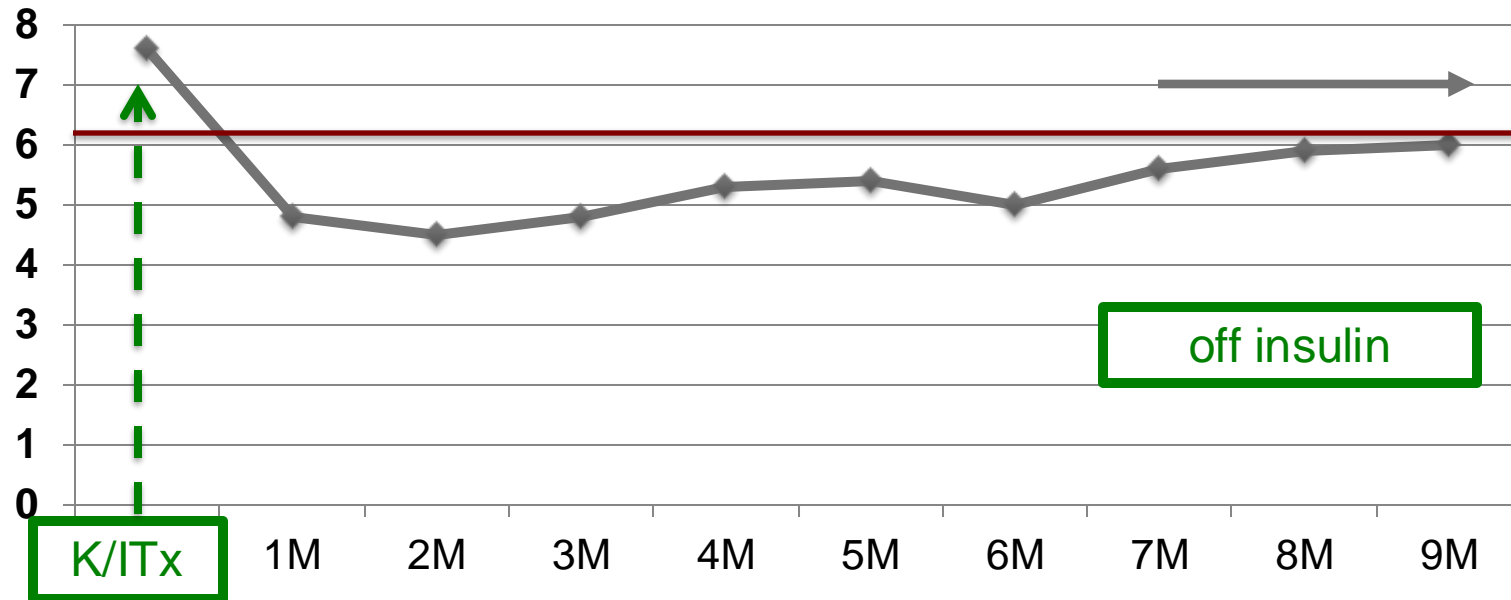
Tac+ MPA+ Pred 5mg
 Creatinine stable 2.2- 2.5
 PRA=0

bladder stimulator, recurrent pseudomonas UTI-> 1 year no UTI

IEQ 620k, IEQ//kg 8,800

Simultaneous pancreas islet and kidney transplantation

HbA1c



fasting c-peptide 1-1.3 pmol/ml

Patient 43 female, T1DM, CKD, BMI 25,

IEQ 242,000 IEQ/kg= 4,1670

The same donor kidney and pancreas for islet Tx donor (BMI 25)

Kidney Tx day 0 → intraportal ITx day 2



Conclusions

Our results indicate that islet after kidney tx:

- might be safe and effective in the restoration of the insulin independence in patients with T1DM
- did not compromise kidney function
- allows to avoid risk of major complications related to pancreas tx and a major surgery