The First ABO-Incompatible Kidney Transplantation in Hong Kong: Queen Mary Hospital Experience

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醫院管理局
HOSPITAL AUTHORITY

INTRODUCTION

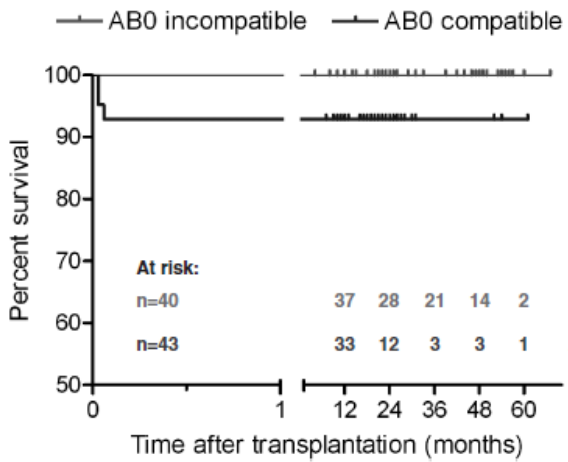
- Service Gap
  - Organ donation rate is low in Hong Kong
  - Over 2,000 patients with end-stage kidney failure (ESKD) are waiting for kidney transplantation.

器官 / 組織	2015	2016	2017	等候人數 (截至31.12.2017)
腎臟捐贈 由遺體捐贈 由活體捐贈	 66 15	 60 18	 61 17	2153
肝臟捐贈 由遺體捐贈 由活體捐贈	 36 23	 37 36	 40 34	87
心臟捐贈	14	12	13	48
雙肺捐贈 單肺捐贈	13 0	8 1	12 1	20
眼角膜捐贈 (片數)	262	276	367	273
皮膚捐贈	10	10	11	不穩定
長骨捐贈	4	1	3	不穩定

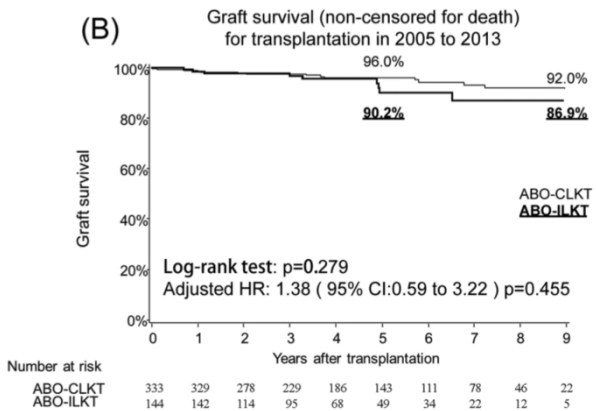
There is a pressing need to increase kidney transplant rate, as long-term dialysis is associated with inferior survival outcome and quality of life than transplantation.

ABO-incompatible kidney transplantation (ABO-i KTx)

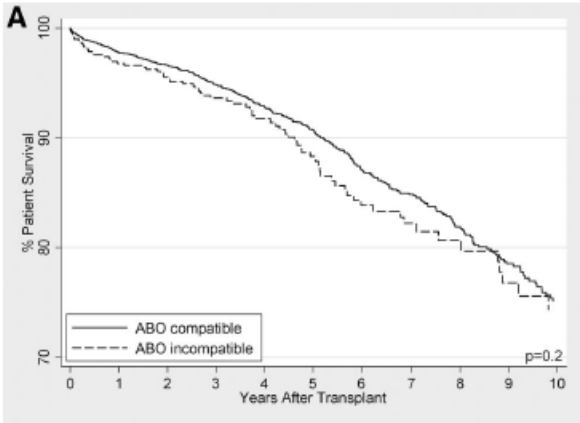
- An established treatment option worldwide
- Comparable patient and graft outcomes to conventional ABO-compatible KTx.



Europe
Wilpert et al 2010



Japan
Okumi et al 2017

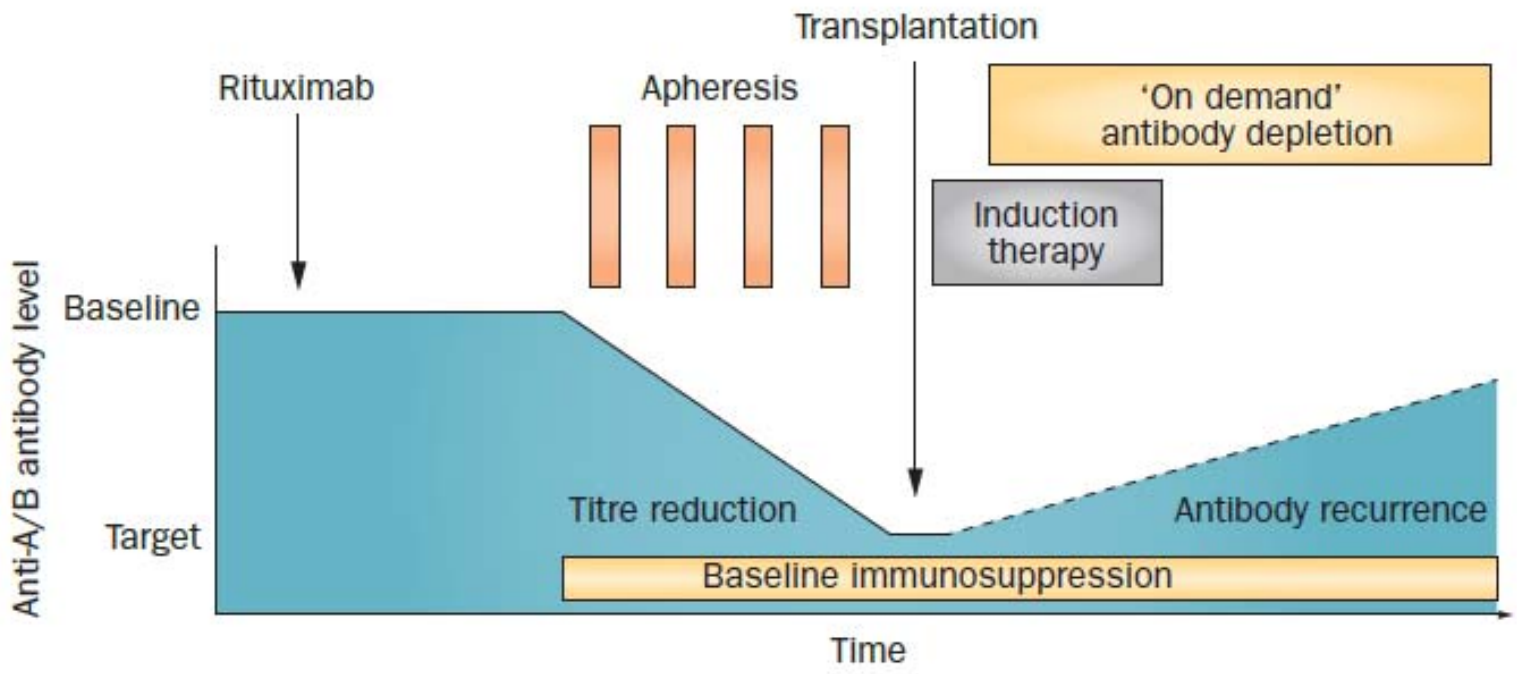


USA
Montgomery et al 2012

Objectives of establishing the ABOi KTx service in QMH

- To increase kidney transplantation rate and improve outcomes of ESKD patients
- To reduce healthcare cost incurred from long-term dialysis and its associated morbidity.

Key elements of ABOi desensitisation protocol



Requirements of Transplant Unit to initiate ABOi KTx service

- Transplant clinician with relevant training
- Laboratory support
  - Haematology laboratory that can provide anti-ABO titre assay
  - Histopathology laboratory with expertise for kidney transplant histopathology
  - Transplantation and Immunogenetics laboratory that provide tissue typing and HLA antibody screening
- Facility for antibody removal, e.g. plasmapheresis
- Blood Bank support – plasma, cryoprecipitate, etc
- Availability of Rituximab, Basiliximab

In QMH

- Multi-discipline collaboration:
  - Doctors, nurses, laboratory staff

  - **Nephrology team**
  - **Clinical haematology team**
  - **Pathology team (Haemato-pathology, Histopathology teams, and Transplantation & Immunogenetics)**
  - **Urology team**

We successfully performed the first ABO-i KTx in Hong Kong in April 2017

Our first Case

Our first pair

Recipients

- Ms So, 39/F

- PMH: HT, obese
- Blood Group O+
- ESRD due to unknown cause
- CAPD since 30 June 2014

Donor

– Ms So, 37/F

- Good past health
- Blood group B+
- Relationship with recipient: younger sister
- Normal kidney Fx and urinalysis

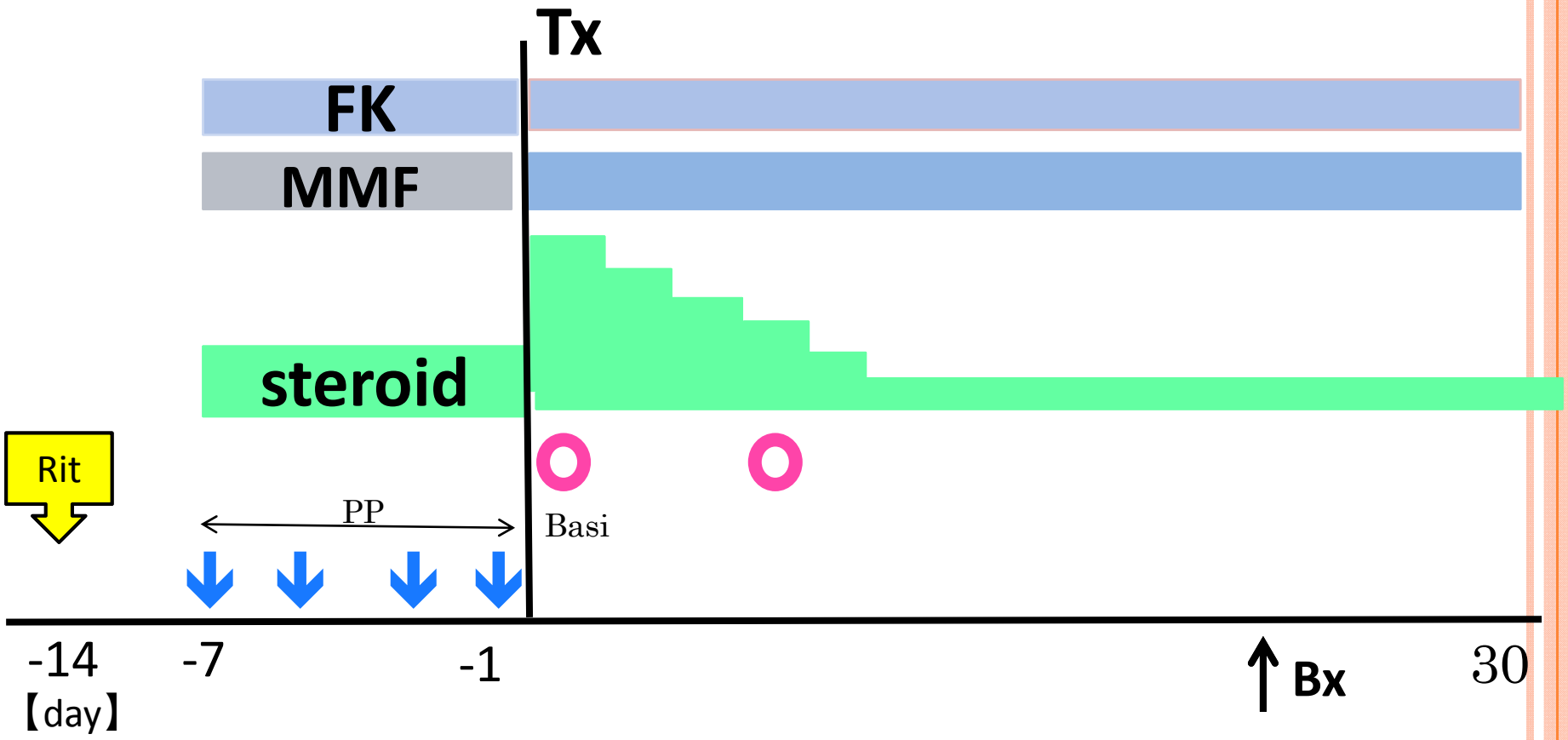
Immunological Risk assessment -Recipient Ms So

- HLA 1 haplotype match
- PRA 0%
- CDC and flow XM: -ve
- No Ig antibodis against HLA Class I and II Ag

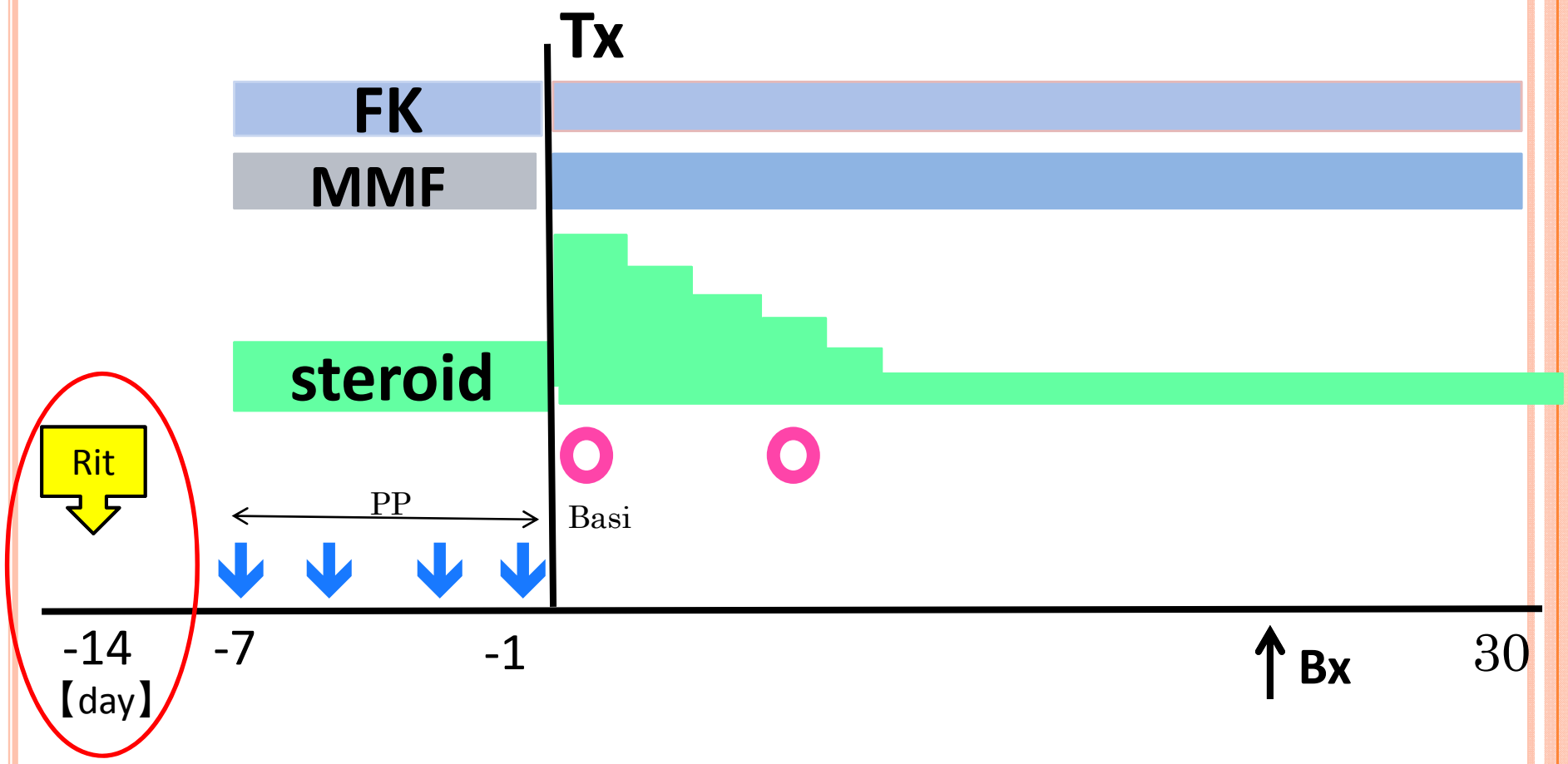
- Baseline Anti-B titer: 1:64

Our ABOi Tx protocol

ABO INCOMPATIBLE



ABO INCOMPATIBLE



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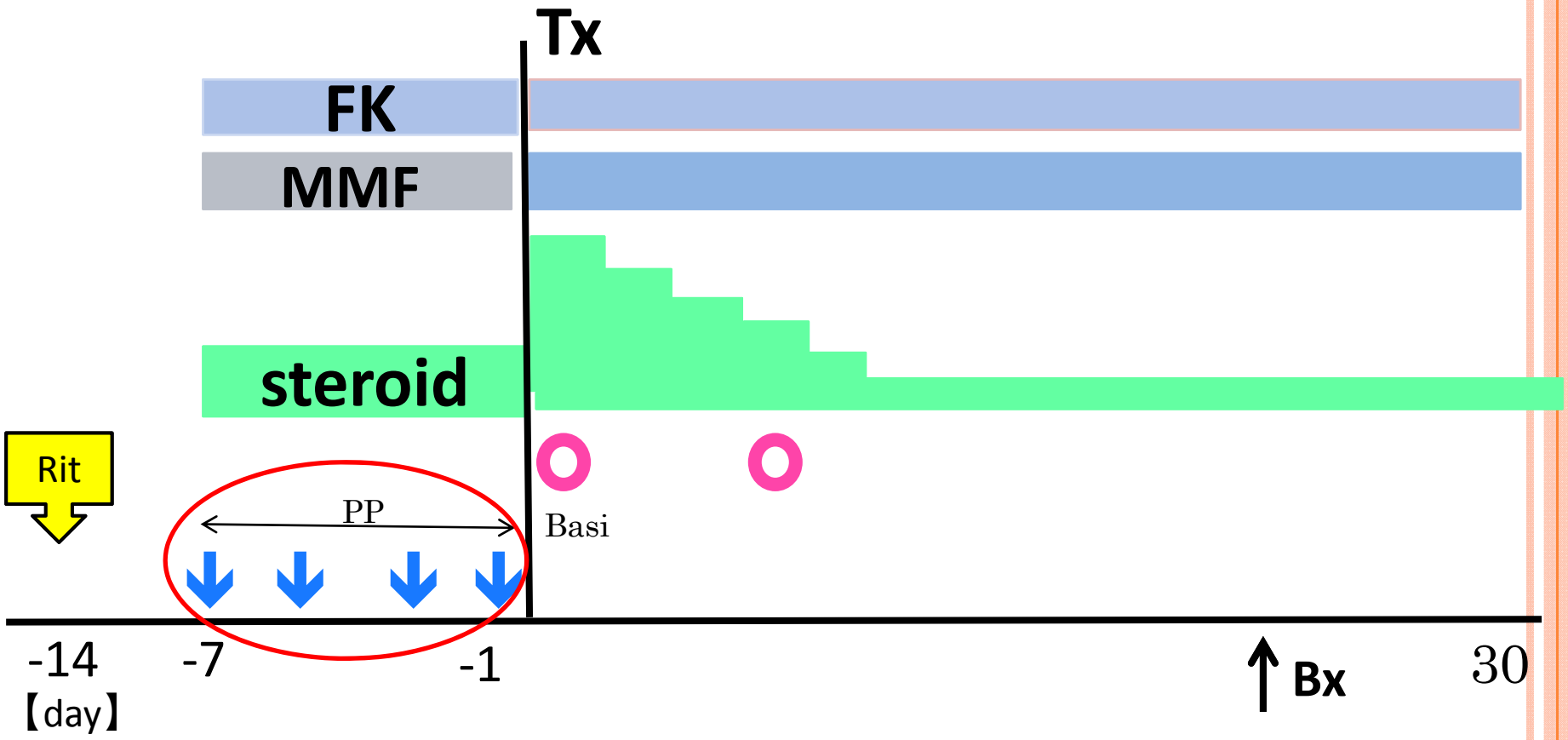

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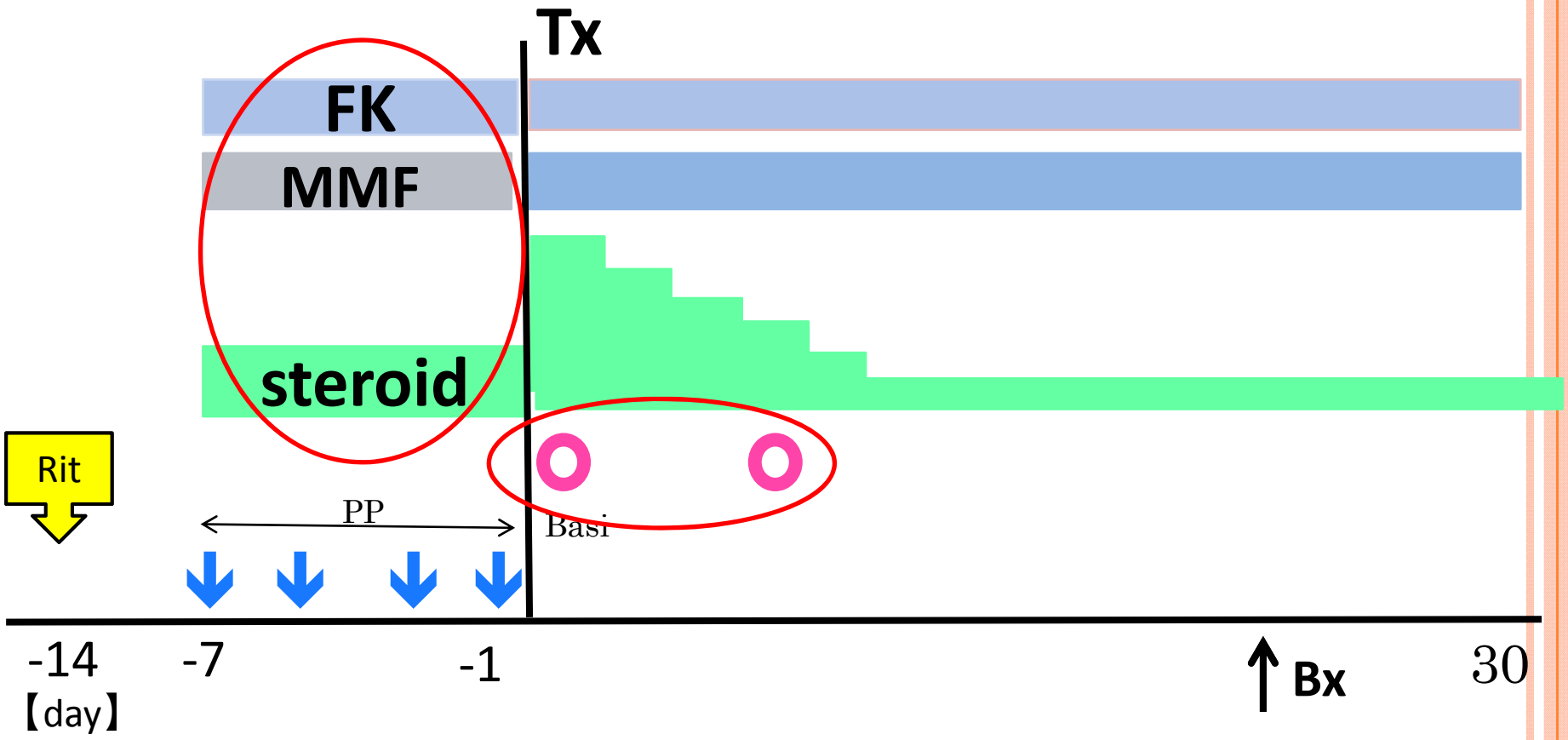

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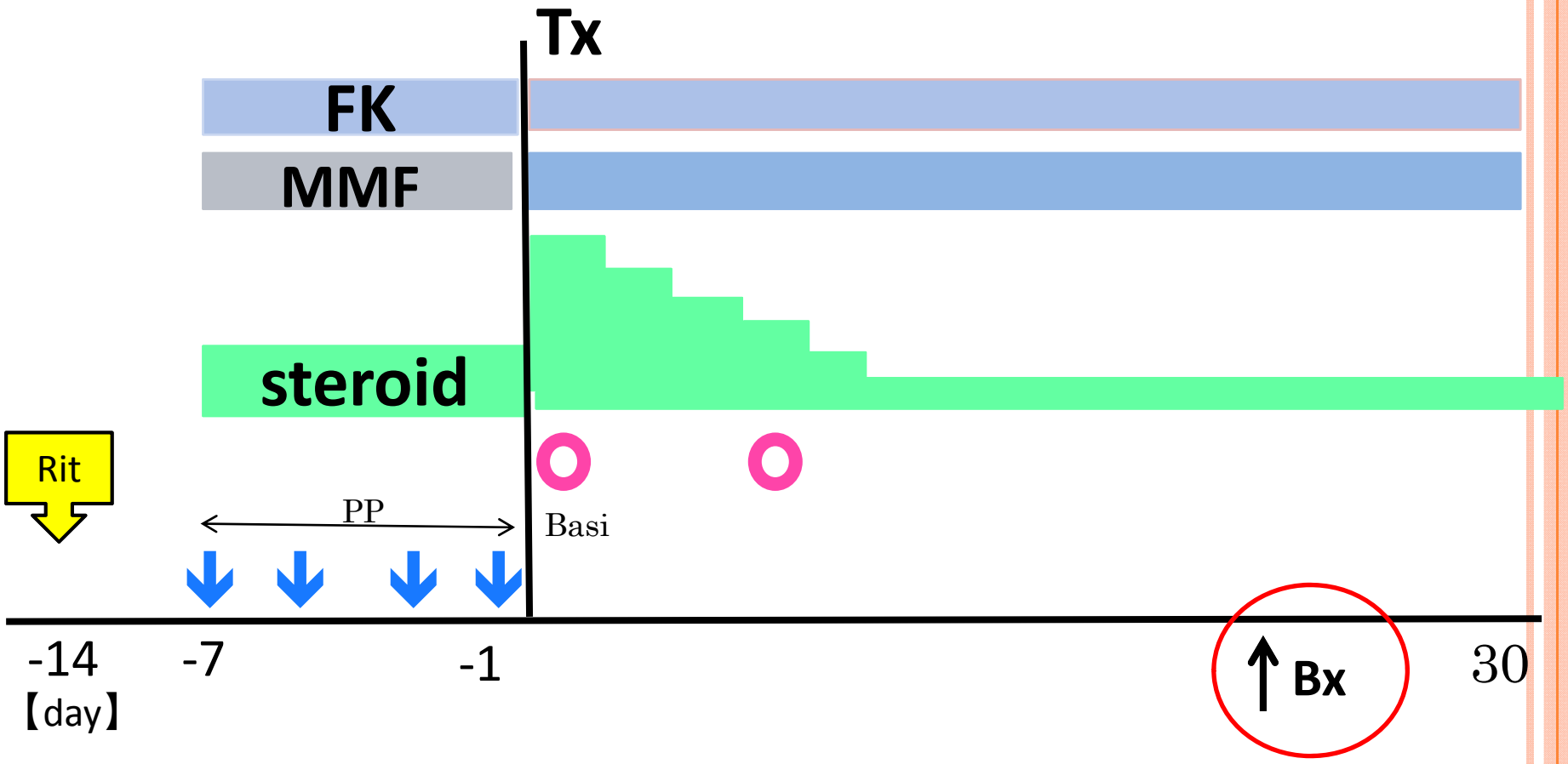
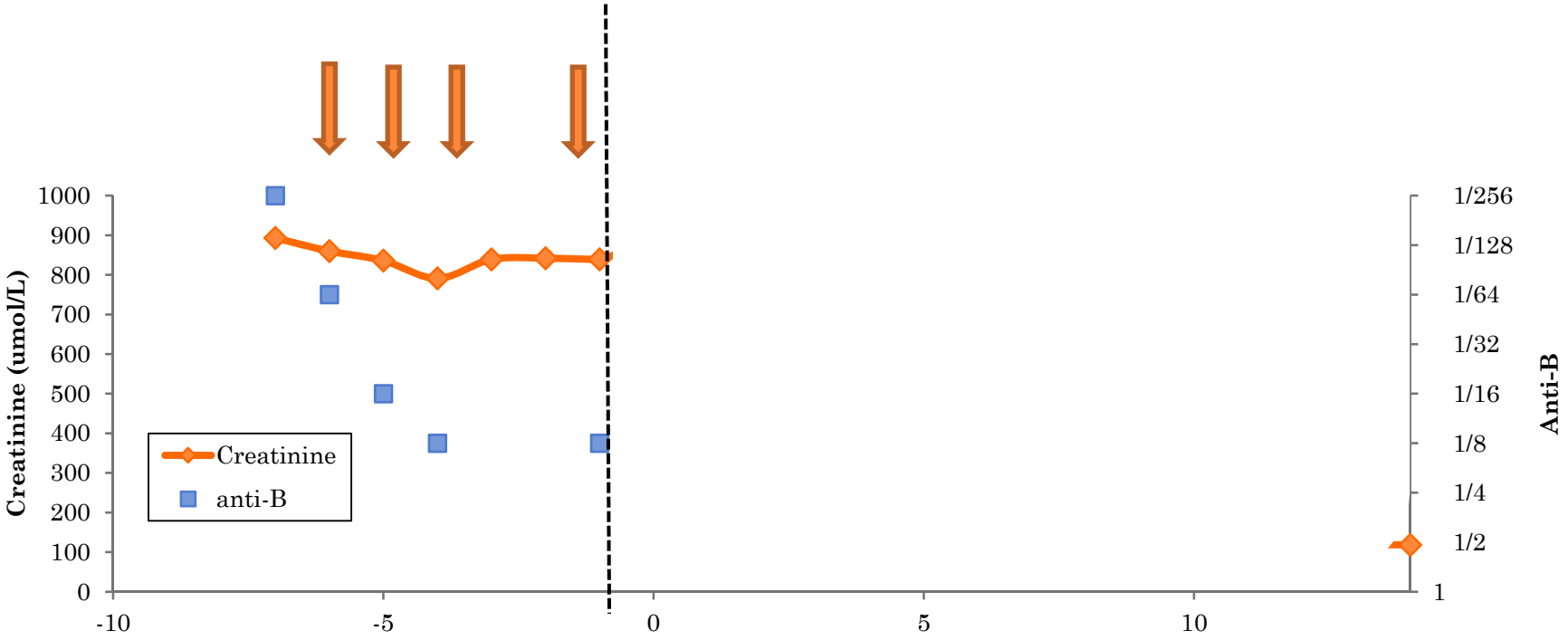


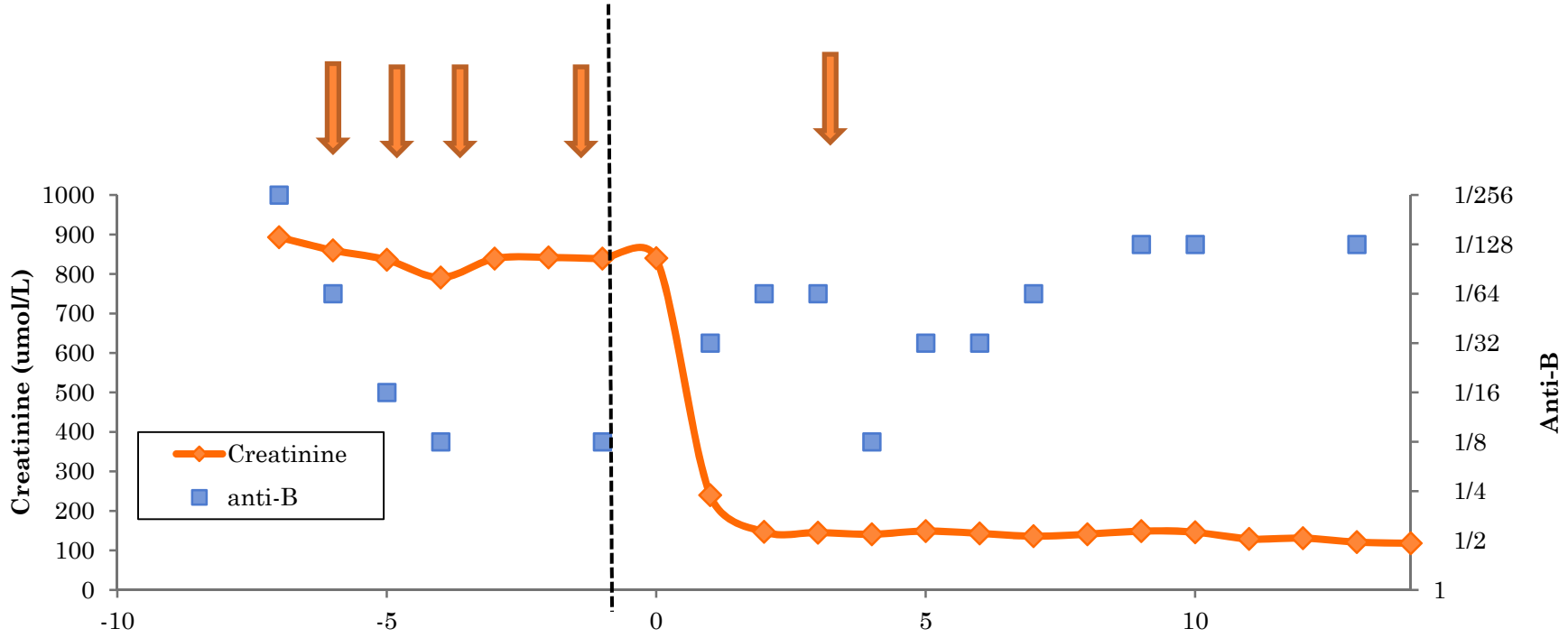
- Anti-ABO titre monitoring in early post-operative period (~1-2 weeks)
- Post-op Plasmapheresis prn
- Protocol biopsy within 1st month post-Tx
- Universal PCP, CMV prophylaxis

Our first Case
– Post Transplant course

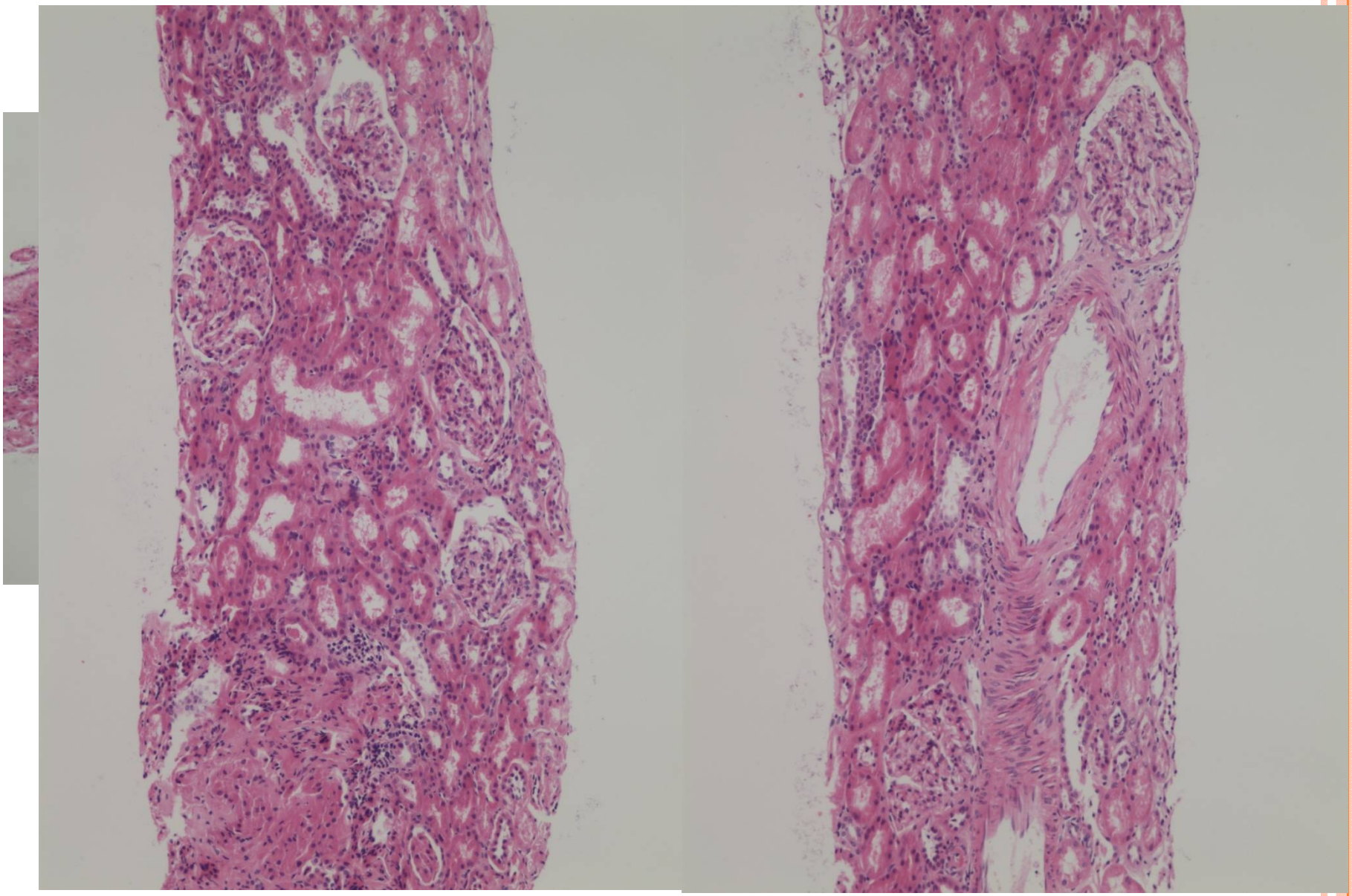
Progress of Ms So



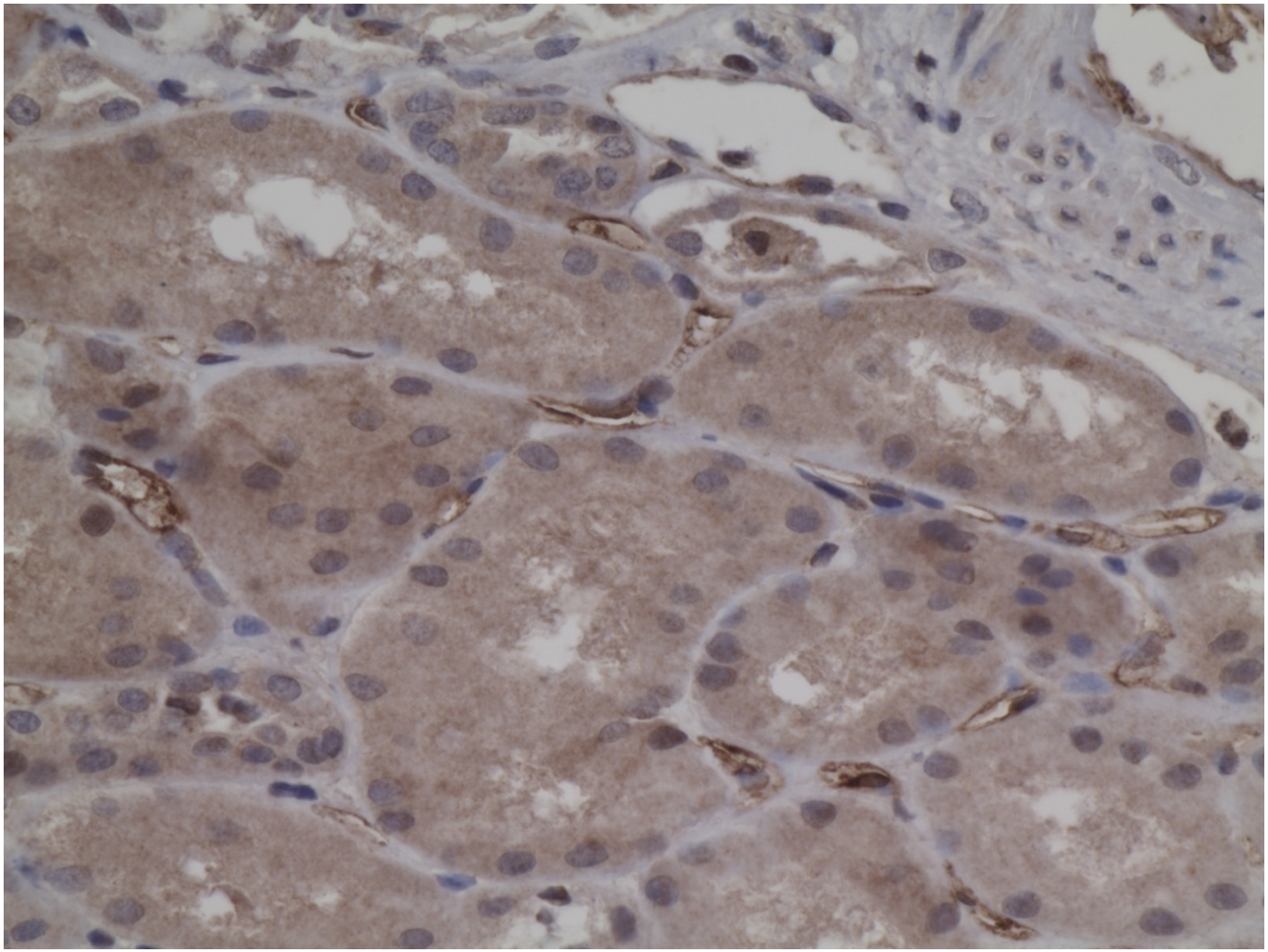
Progress of Ms So



Protocol Biopsy – 3 weeks



C4D



Conclusion

- ABO incompatible kidney transplant is a feasible approach
  - To increased the rate of kidney transplantation
  - To improve patients outcome

Team Work

- Nephrology
- Urology
- Clinical Haematology
- Haematopathology
- Other long-term partners – e.g. Transplantation & Immunogenetics; Histopathology; Microbiology, …

Acknowledgement (training and support):

- Tokyo Women Medical University – Profs Tanabe & Ishida
- Westmead Hospital, Sydney – Prof Chapman