THE FIRST ABO-INCOMPATIBLE KIDNEY TRANSPLANTATION IN HONG KONG: QUEEN MARY HOSPITAL EXPERIENCE

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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.

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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 antibodies against HLA Class I and II Ag

- Baseline Anti-B titer: 1:64
Our ABOi Tx protocol
ABO INCOMPATIBLE

-14 [day]  -7  -1  [Tx]

FK

MMF

steroid

Rit

PP  Basi

Bx  30
ABO INCOMPATIBLE

-14 day

Rit

FK

MMF

steroid

Tx

-7

-1

PP

Basi

↑ Bx 30

↓ ↓ ↓ ↓
ABO INCOMPATIBLE

-14 [day]  -7  -1

FK
MMF
steroid

Tx

Rit

PP

Basi

↑ Bx  30
• Anti-ABO titre monitoring in early post-operative period (~1-2 weeks)
• Post-op Plasmapheresis prn
• Protocol biopsy within 1\textsuperscript{st} month post-Tx
• Universal PCP, CMV prophylaxis
Our first Case
- Post Transplant course
Progress of Ms So

Anti-B

Creatinine (umol/L)

Creatinine anti-B
Progress of Ms So

Creatinine (umol/L)

Anti-B

Creatinine

anti-B
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
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