

Long-term outcome of ABO-incompatible adult living donor liver transplantation using a single protocol over 10 years

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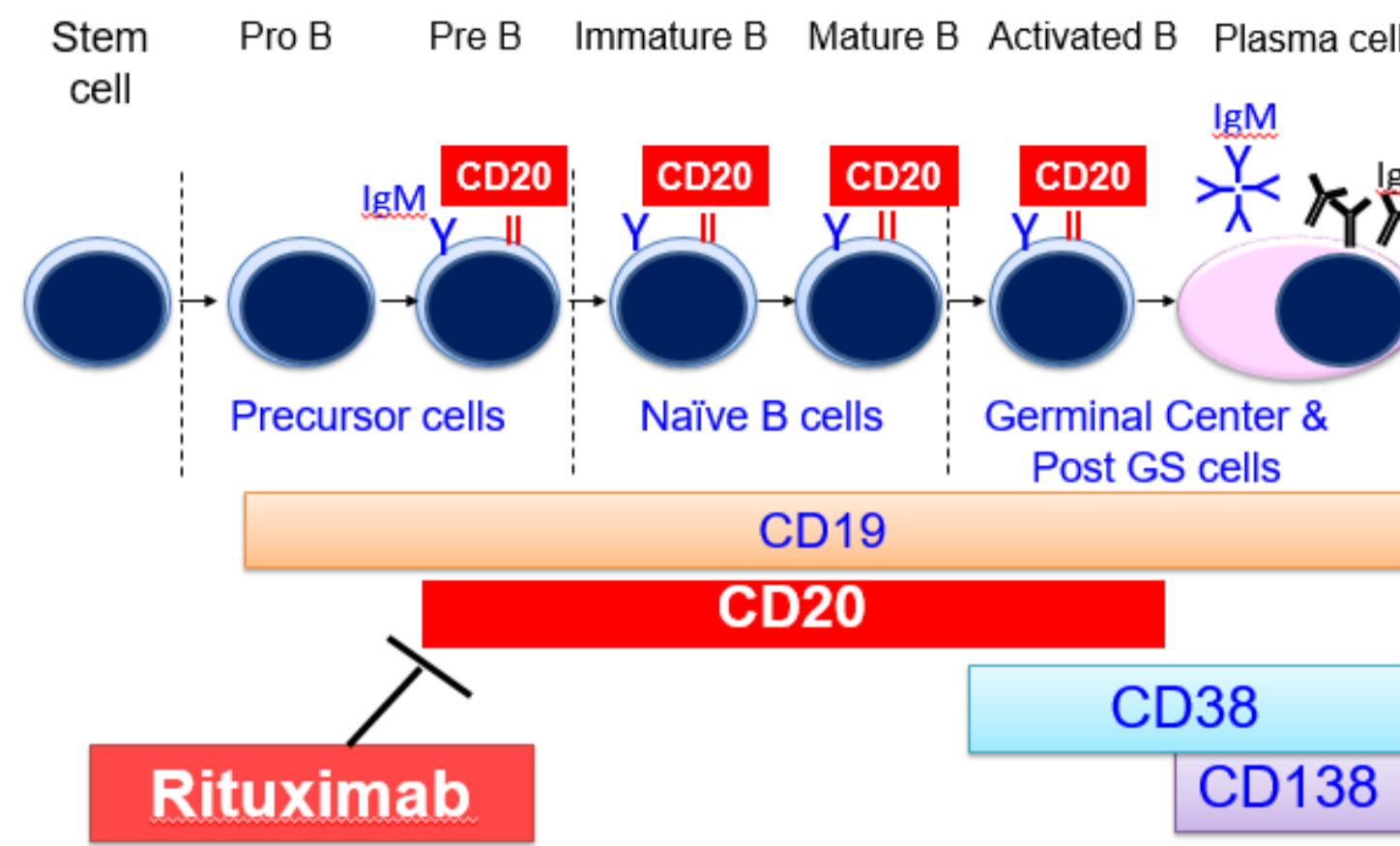
Background

- ABO incompatibility has been a major obstacle to expand the donor pool, especially in adult liver transplantation.
- The utilization of desensitization drug such as anti-CD20 monoclonal antibody (Rituximab) has dramatically improved the results of ABO-incompatible LDLT in the last decade.
- However, the effect of ABO-incompatibility on the outcome of LDLT for hepatocellular carcinoma (HCC) is unknown.

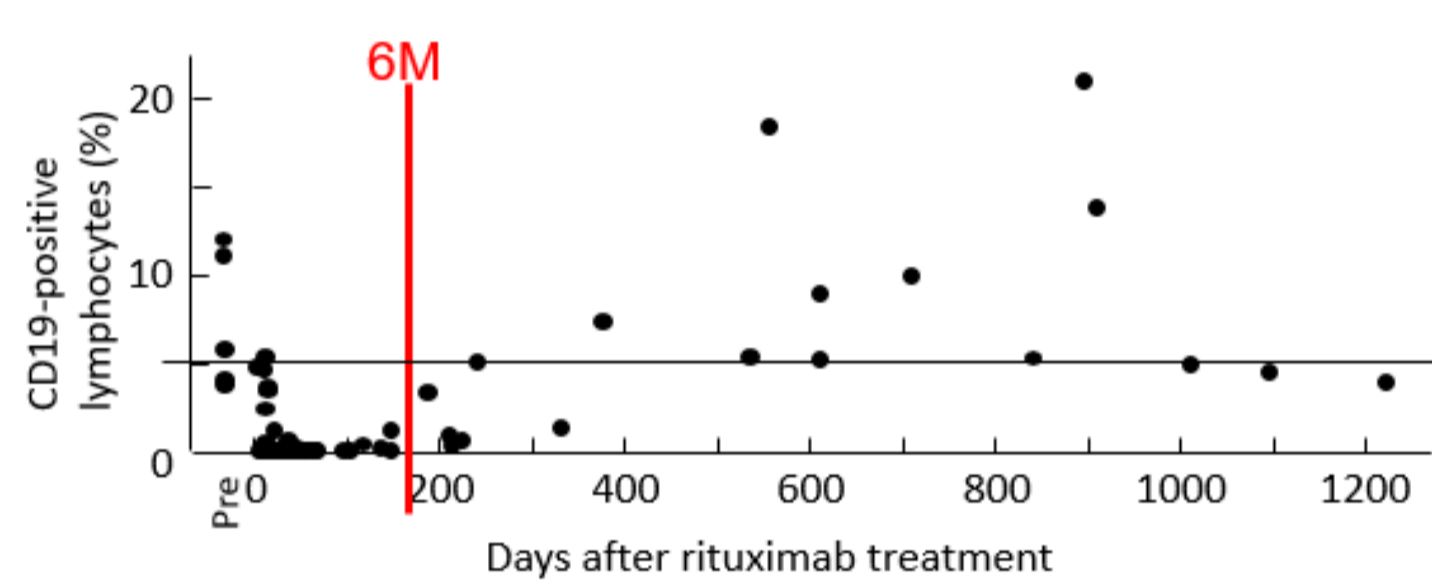
Aims

- To show our 10-year experience of ABO-incompatible LDLT under a single desensitization protocol.
- To investigate the effect of ABO-incompatibility on the outcome of LDLT for HCC.
- To discuss possible oncological effect of desensitization drug on the outcome.

Rituximab (anti-CD20 Ab): mode of action



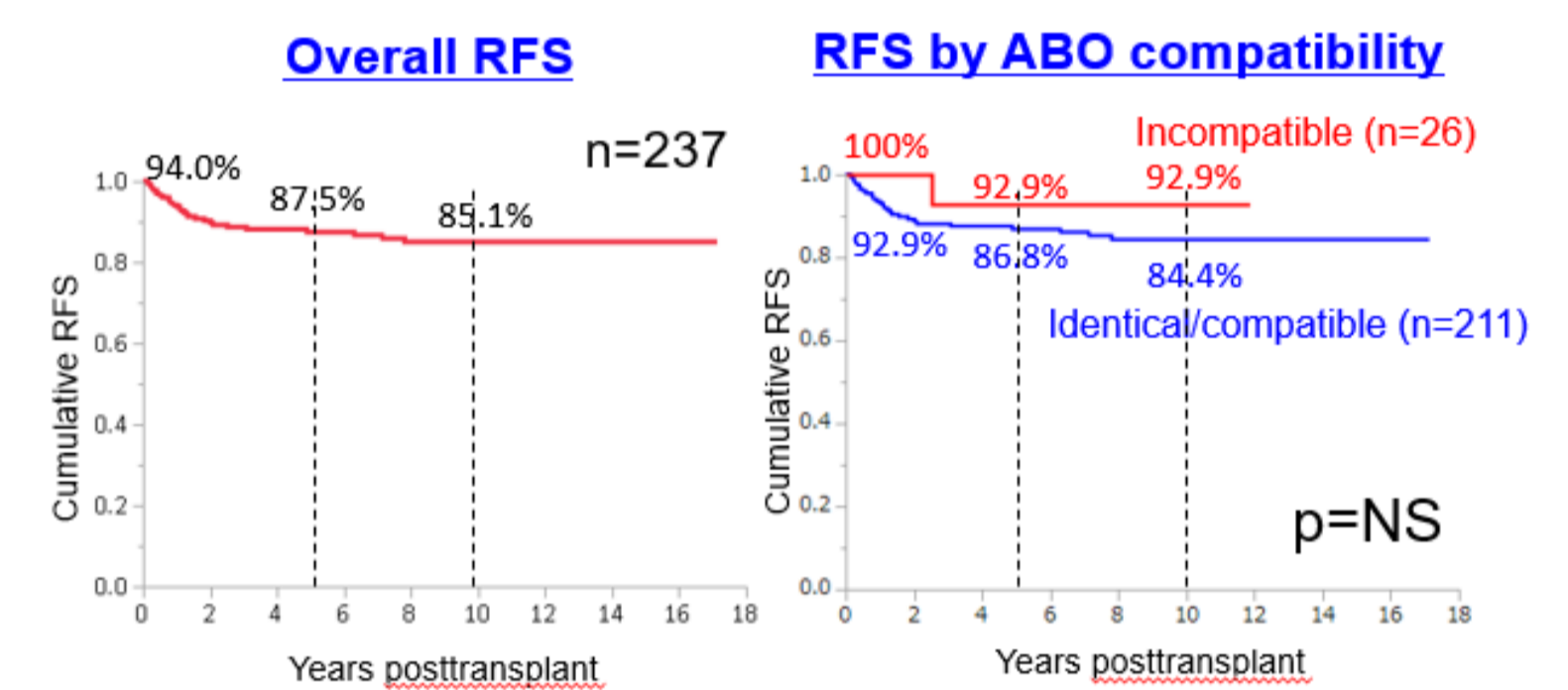
Chronological changes in CD19-positive lymphocytes after rituximab treatment



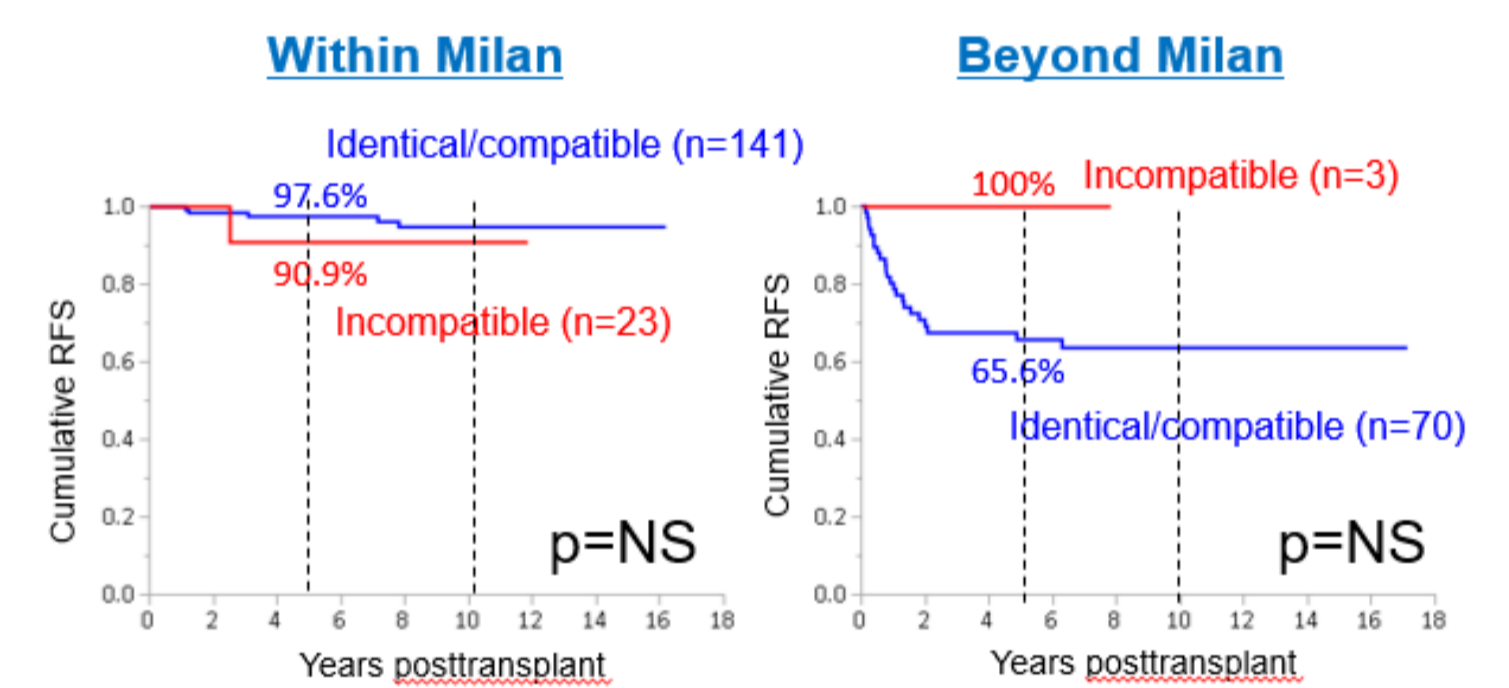
Characteristics of HCC patients

Factors	Incompatible (n=26)	Identical/compatible (n=211)	P-value
Age (years)	58.6±7.4	57.5±8.7	NS
Sex (%Female)	54.0	39.8	NS
MELD score	15.7±6.9	12.8±5.0	<0.01
Child-Pugh A/B/C (n)	1/5/20	13/71/127	NS
Tumor size (cm)	1.9±0.9	2.1±1.3	NS
Tumor number*	1 (0-13)	2.0 (0-400)	NS
Milan criteria (%within)	88.5	66.8	<0.05
AFP (ng/ml)*	20.1 (2.0-903)	17.7 (1.2-43,107)	NS
PIVKA-II (mAU/ml)*	63 (8-997)	60 (3-13,691)	NS
GV/SLV (%)	42.2±7.6	40.8±8.1	NS
Operative time (min)	726±90.7	790±166	<0.05
Blood loss (ml)	6,273±5,033	7,343±16,302	NS

Influence of ABO-i grafts on HCC recurrence



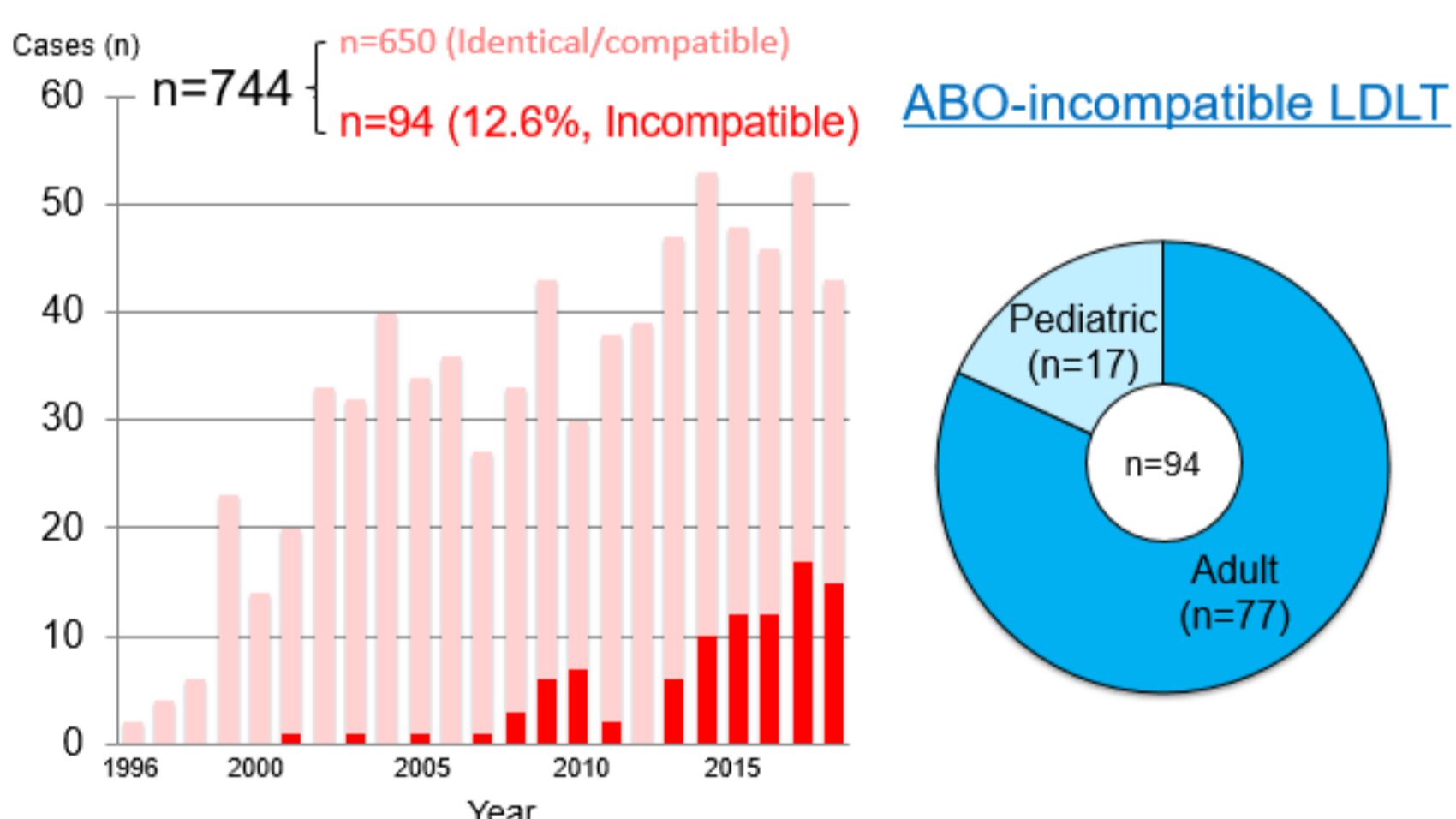
Influence of ABO-i grafts on HCC recurrence stratified by Milan criteria



Conclusions

- The simple protocol incorporating a single dose of rituximab and plasma exchange without PV or HA infusion therapy is a safe and established option to overcome ABO-incompatible adult LDLT.
- ABO-incompatible adult LDLT is no longer a contraindication but rather a recommended modality in adults.

ABO-incompatible LDLT in Kyushu University (Oct. 1996-Aug. 2018)



Patient & graft characteristics (Adult)

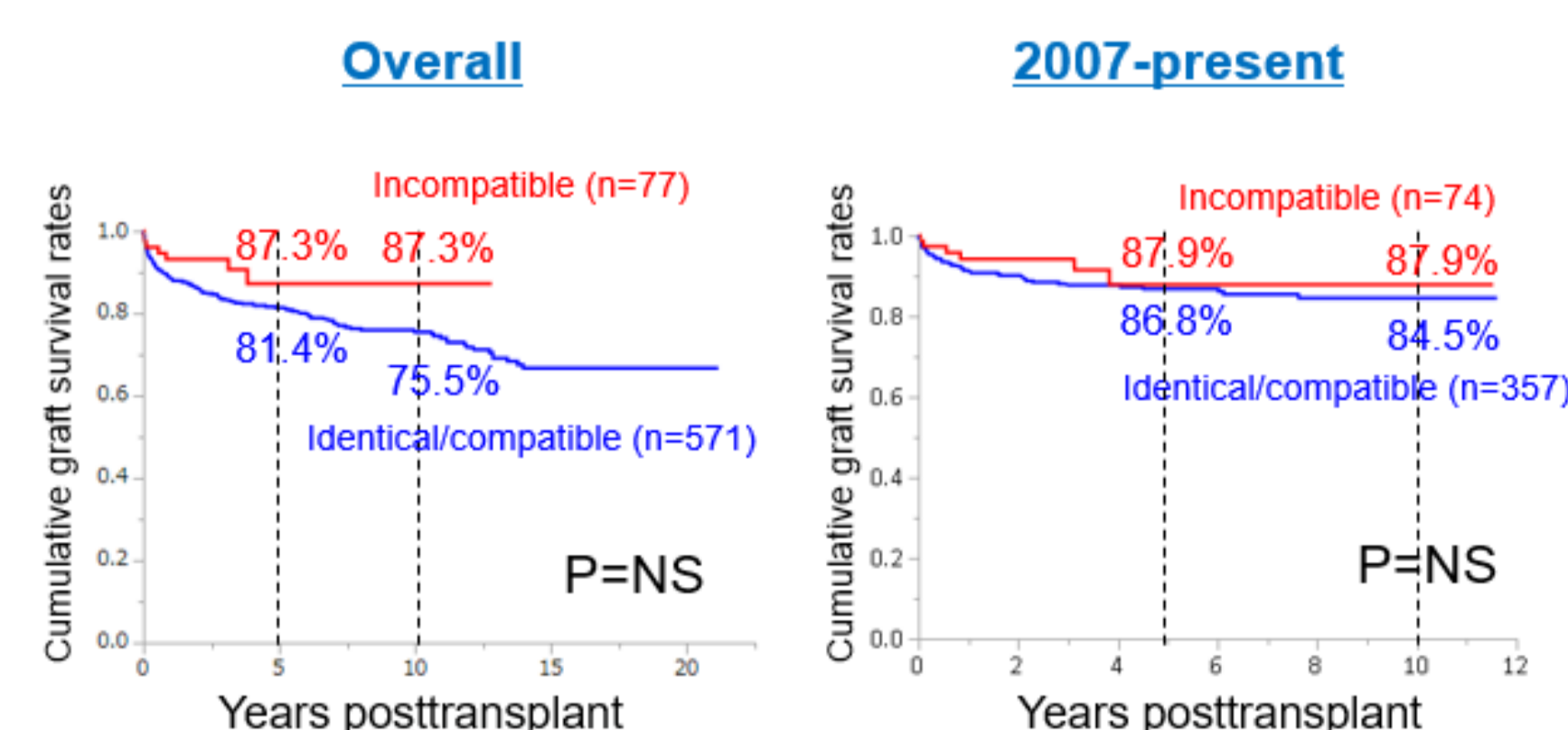
Factors	Incompatible (n=77)	Identical/compatible (n=571)	P-value
Age (years)	53.8±12.3	53.0±11.8	NS
Sex (%Female)	57.1	52.4	NS
Indications (%HCC)	39.0	37.1	NS
HCV (%positive)	31.2	36.8	NS
MELD score	16.2±7.1	17.3±7.0	NS
Graft type (% left lobe)	42.9	54.3	NS
Graft weight (g)	505±112	483±114	NS
GV/SLV (%)	43.1±10.4	41.8±9.0	NS
Operative time (min)	724±126	772±175	<0.05
Blood loss (ml)	6,365±5,543	7,600±15,174	NS
Splenectomy (%)	89.8	61.8	<0.0001

Complications

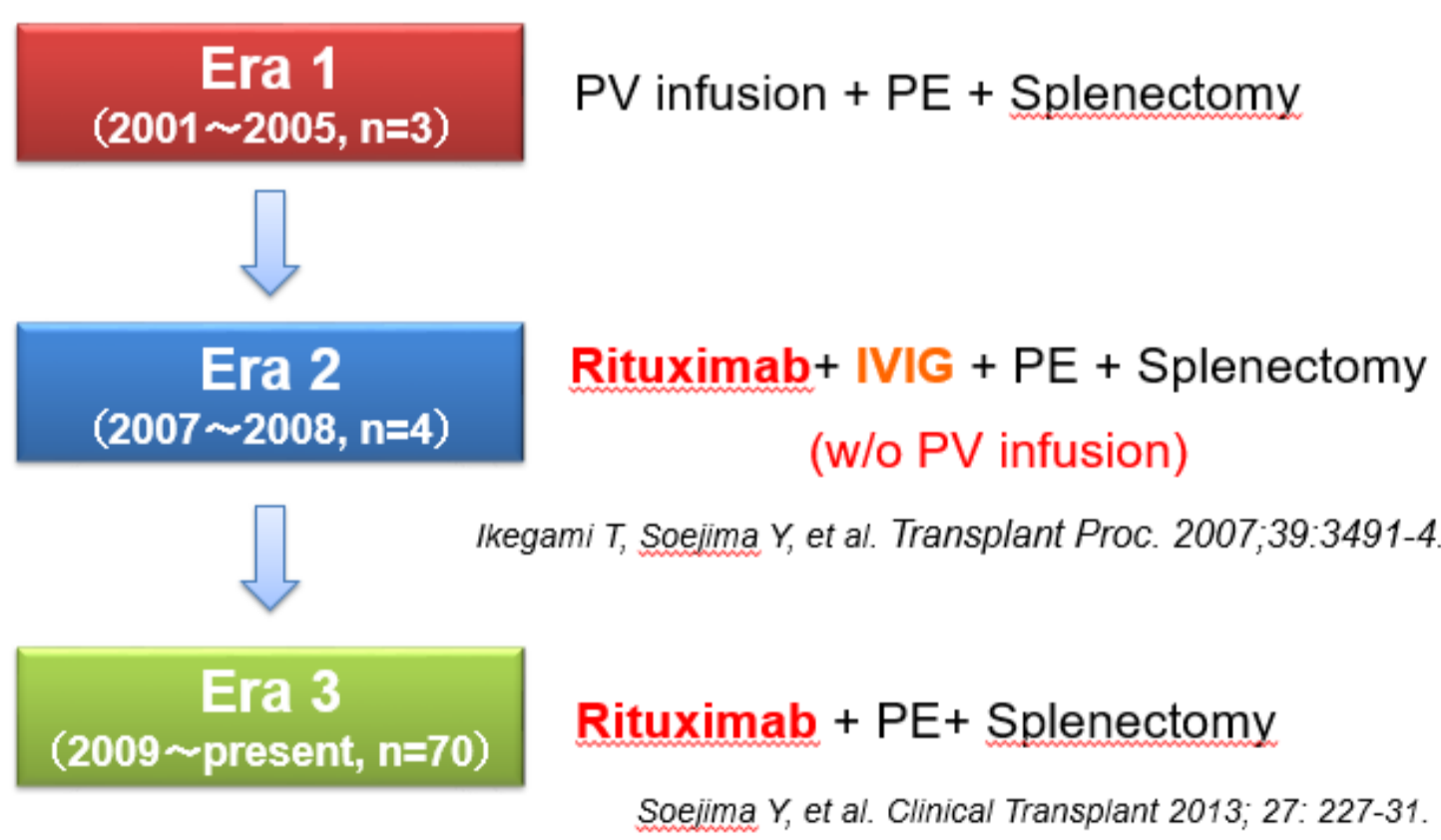
Complications	Incompatible (n=77)	Identical/compatible (n=571)	P-value
ACR (%)	10.3	13.1	NS
AMR	0.6	0.5	NS
CR	2.6	3.0	NS
HAT	2.6	1.8	NS
PVT	3.9	2.5	NS
CMV disease	2.6	3.3	NS
Sepsis	1.3	10.9	NS
SFGS	5.2	14.4	NS
Bile leak	2.6	8.1	NS
Bile duct strictures	9.1	17.7	NS

ACR, acute cellular rejection; AMR, antibody-mediated rejection; CR, chronic rejection; HAT, hepatic artery thrombosis; PVT, portal vein thrombosis; SFGS, small-for-size graft syndrome.

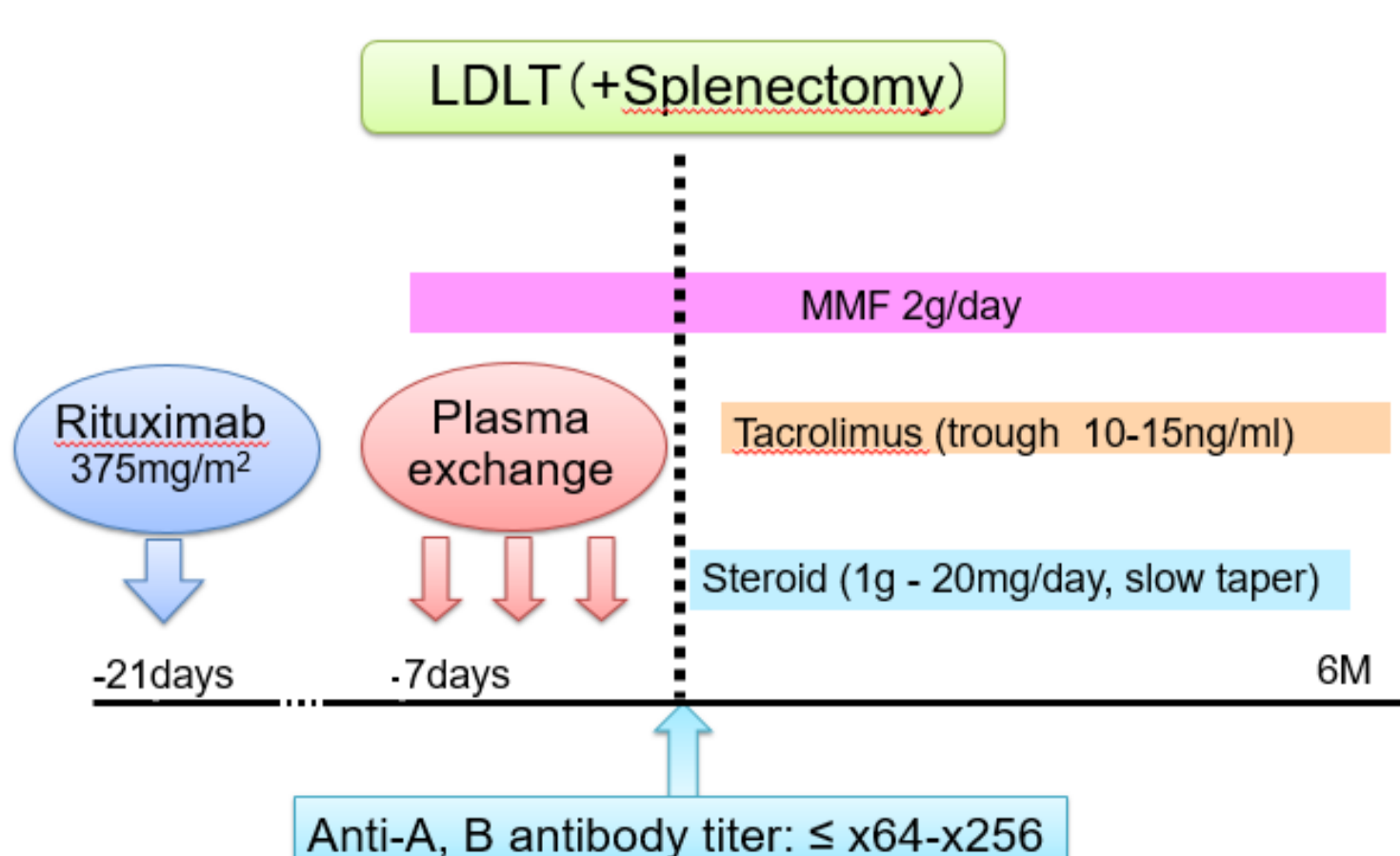
Graft survival rates in adults according to ABO compatibility



Evolution of the protocol for adult ABO-incompatible LDLT in Kyushu University



ABO incompatible LDLT protocol w/o infusion Era 3 : 2009-present (n=70)



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COI Disclosure
Name of First Author: Yuji Soejima
The author have no financial conflicts of interest to disclose concerning the presentation.