

LIVER TRANSPLANT OUTCOMES IN ABORIGINAL AND TORRES STRAIT ISLANDERS

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Transplant Study Group

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BACKGROUND

- ✘ Higher prevalence of liver disease in Aboriginal and Torres Strait Islanders (ATSI)¹
- ✘ Among ATSI, admissions with liver disease accounted for higher proportion of overall admission²
- ✘ Increase in age-adjusted mortality rates in ATSI men and women with chronic liver disease compared to the general Australian population³

¹Ho, K.M., et al., Med J Aust, 2006. **184**(10): p. 496-9

²Muwanwella, N., et al., J. Gastroenterol. Hepatol, 2011. **25**(Suppl 4): p. 44-55

³Fisher, D.A. et al., Med J Aust, 2003. **178**(2): p. 82-5

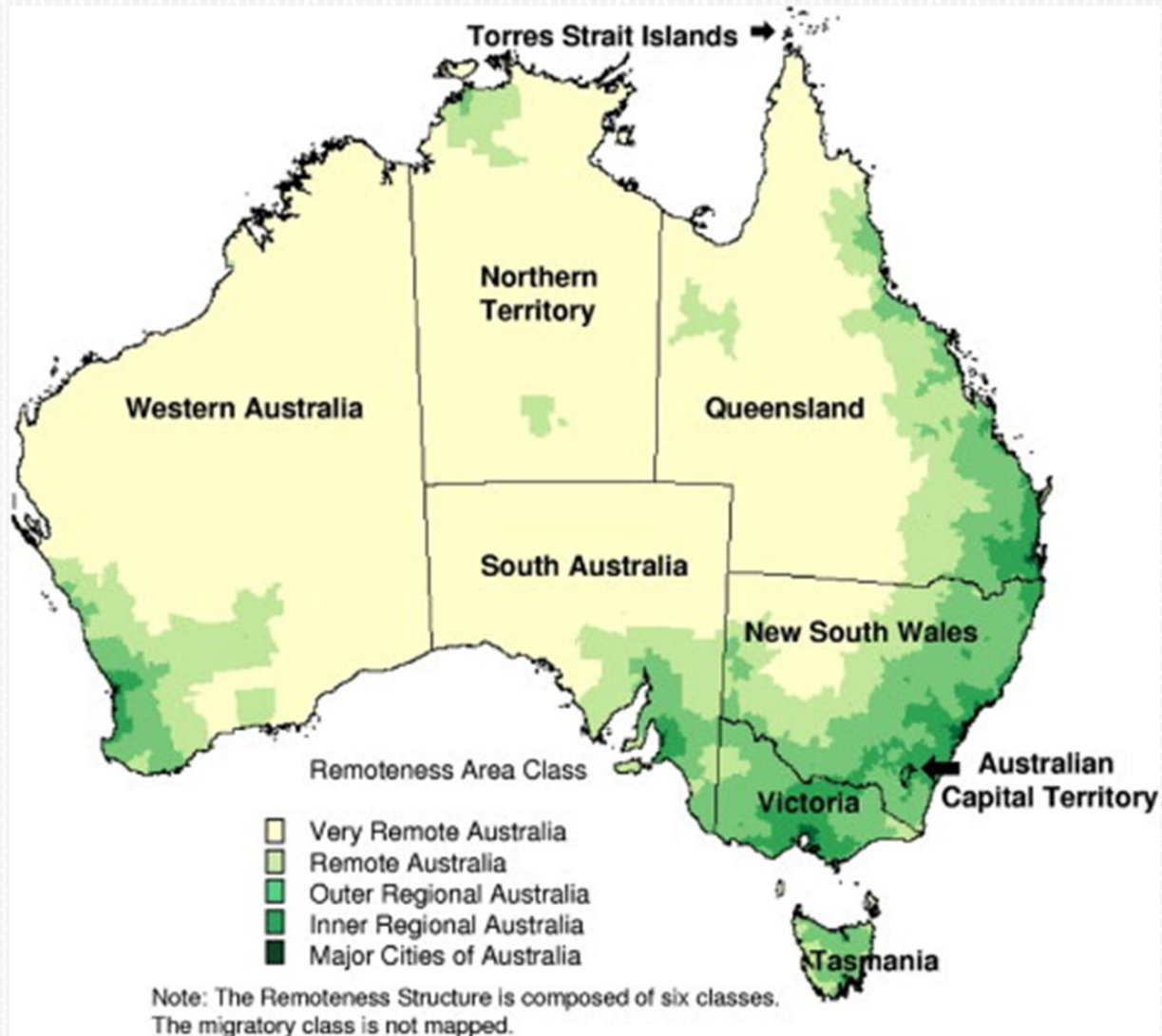
AIM

- ✘ Compare the Liver Transplant (LT) survival outcomes in ATSI and non-ATSI populations
- ✘ Assess factors influencing survival in ATSI and
- ✘ Calculate the proportion of ATSI having LT compared to the overall population

METHODS

- ✘ Retrospective review of Australian and New Zealand Liver Transplant (ANZLT) registry
- ✘ 1985-2012
- ✘ Primary LT performed across the 5 centres in Australia (Brisbane, Sydney, Melbourne, Adelaide and Perth)
- ✘ Children and adults analysed separately
- ✘ Various host, donor and post-transplant variables collected

ACCESSIBILITY/REMOTENESS INDEX OF AUSTRALIA (ARIA) SCORE



OUTCOMES AND STATISTICS

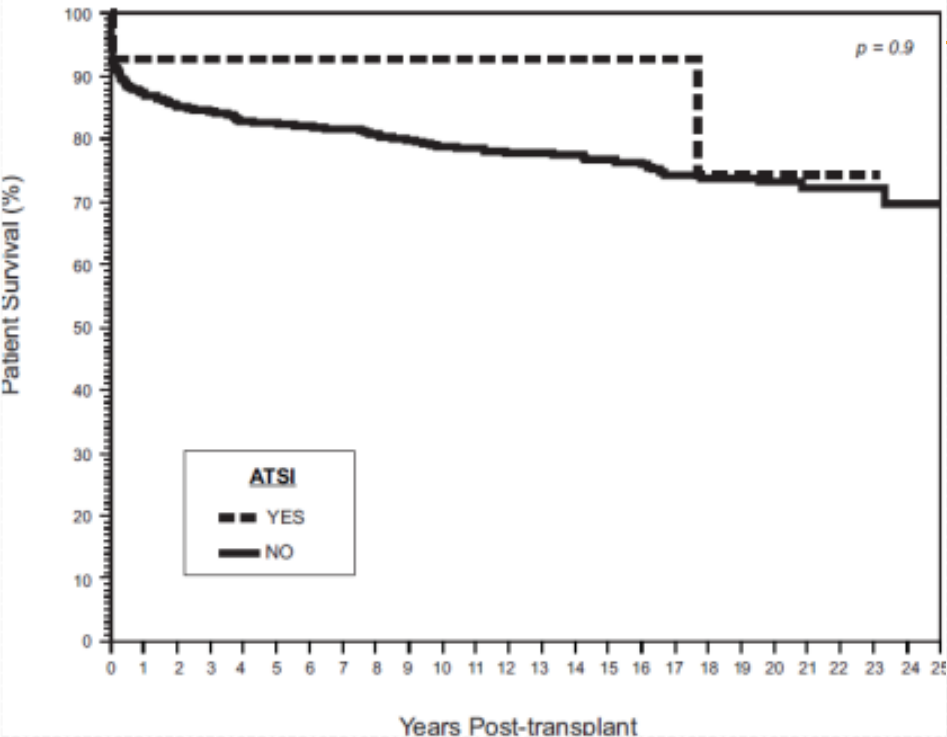
- Primary endpoint for the overall cohort:
 - Death or re-transplantation.
- ATSI and non-ATSI groups were compared using log-rank test
- Within the ATSI cohort, children and adults assessed separately using Kaplan-Meier survival curves
- Proportion of overall and LT recipients were compared using chi-square test

RESULTS-BASELINE CHARACTERISTICS

Variables	Children (≤ 16 years)	Adults
	(n=14)	(n=31)
	Median (range)	
Recipient age (years)	9.6 (0.2-15.3)	44.5 (19.5-65.5)
PELD/MELD score	14 (3-40)	17 (3-42)
ARIA score	2.5 (0-12)	1.5 (0-10.9)
Donor age (years)	20 (1-52)	35 (15-73)
Waiting time (days)	55 (1-2195)	97 (1-378)
Cold Ischemic time (minutes)	500 (120-739)	513 (254-840)
Follow-up duration (months)	44 (0-281)	83 (3-185)
	Number (%)	
Gender - Males	7 (50)	18 (58.1)
Blood group		
A	3 (21.4)	16 (51.6)
B	2 (14.3)	3 (9.7)
O	9 (64.3)	12 (38.7)

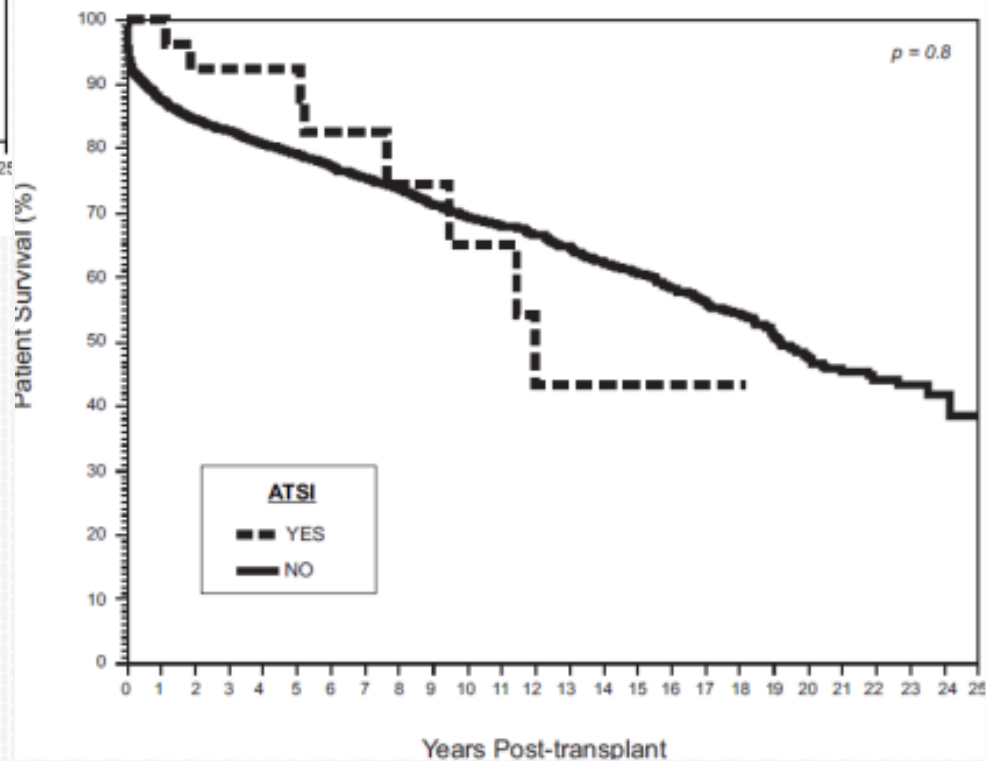
RESULTS-OVERALL COHORT

Paediatric Recipients



⇒ Median (range) survival in ATSI and non-ATSI children: [6.5 (0.1-23.5) v 9.0 (0-28.2) years, $p=0.9$]

Adult Patients



← Median (range) survival between ATSI and non-ATSI adults: [7.1 (0.1-15.7) v 6.3 (0-26.7) years, $p=0.8$]

RESULTS-ATSI COHORT

	Children (n=14)	Adults (n=31)
Deaths/Retransplantation	4 (28.6%)	10 (32.3%)
Patient survival (n=45)		
5- years	78.6%	84.6%
10- years	65.5%	61%
Graft survival (n=51)		
5- years	72.4%	84.6%
10- years	63.4%	61%

PREDICTORS OF SURVIVAL

Variables	Children (n=14)		Adults (n=31)	
	HR (95% CI)	P-value	HR (95% CI)	P-value
Gender	0.8 (0.2-6.1)	0.9	1.6 (0.4-6.5)	0.5
Age	0.9 (0.7-1.1)	0.4	1.1 (0.9-1.2)	0.5
MELD score	0.9 (0.8-1.1)	0.7	1.01 (0.9-1.1)	0.8
Waiting time on the list	1.0 (0.9-1.0)	0.9	1.0 (0.9-1.0)	0.5
ARIA (Remote)	1.2 (1.01-1.53)	0.03	1.02 (0.2-4.9)	0.9
Donor age	0.9 (0.9-1.1)	0.8	1.1 (0.9-1.1)	0.1
Cold Ischemic time	0.9 (0.9-1.1)	0.5	0.9 (0.9-1.1)	0.5
Blood group		0.1		0.1
A	1		1	
B	0.7 (0.1-3.7)	0.7	0.7 (0.2-1.8)	0.5
O	4.8 (0.9-23.7)	0.06	3.8 (1.1-12.7)	0.03

PROPORTION OF ATSI HAVING LT

Age group	Total population ⁴		LT recipients ⁵		(χ^2 , p value)
	Overall	ATSI (%)	Overall	ATSI (%)	
Children	3,808,506	178,692 (4.7%)	636	14 (2.2%)	8.2, 0.004
Adults	15,604,734	279,828 (1.8%)	2857	31 (1.1%)	7.9, 0.005

⁴Population Characteristics, Aboriginal and Torres Strait Islander Australians 2001. Canberra: Australian Bureau of Statistics (Catalogue no 4713.0)

⁵ANZLT registry report 2012. Australia and New Zealand Liver Transplant Registry report 2012

CONCLUSIONS

- ✘ Overall patient survival post LT in ATSI is comparable to the non-ATSI group
- ✘ Trend towards increased death/re-transplantation in ATSI from remote/very remote areas
- ✘ Both paediatric and adult ATSI are under-represented in the overall LT population

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