The indication of liver transplantation for hepatocellular carcinoma in post-direct acting antivirals era in Japan

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Background

Recent developments in the **treatment** of

- **Hepatocellular carcinoma** (**HCC**)
- **Hepatitis C virus**

May **change** the **indication** of **liver transplantation (LT)**

Japanese national rule of **Deceased Donor LT (DDLT)** for **HCC**

- **Child-Pugh B** or **C**
- **HCC** within **Milan** or **5-5-500**
  - **Tumor size 5 cm≥**
  - **Number 5≥**
  - **AFP 500≥**

  Shimamura T, Transpl Int 2019

  Double criteria as **Japan criteria** Implemented as of Aug. 2019 for DDLT
- **MELD exception**

  Calculated MELD at wait-list registration

  ✚ **Exception point - 2 points every 3 month** adopted since May 2019

Aim

To evaluate the **Japanese national rule** for **HCC** in **LT**

Patients

N=294 **Patients** with **detected primary HCC** **Jan. 2013 - Dec. 2017**

Multicenter study in **Sapporo, Japan**

↓ N=5 insufficient data

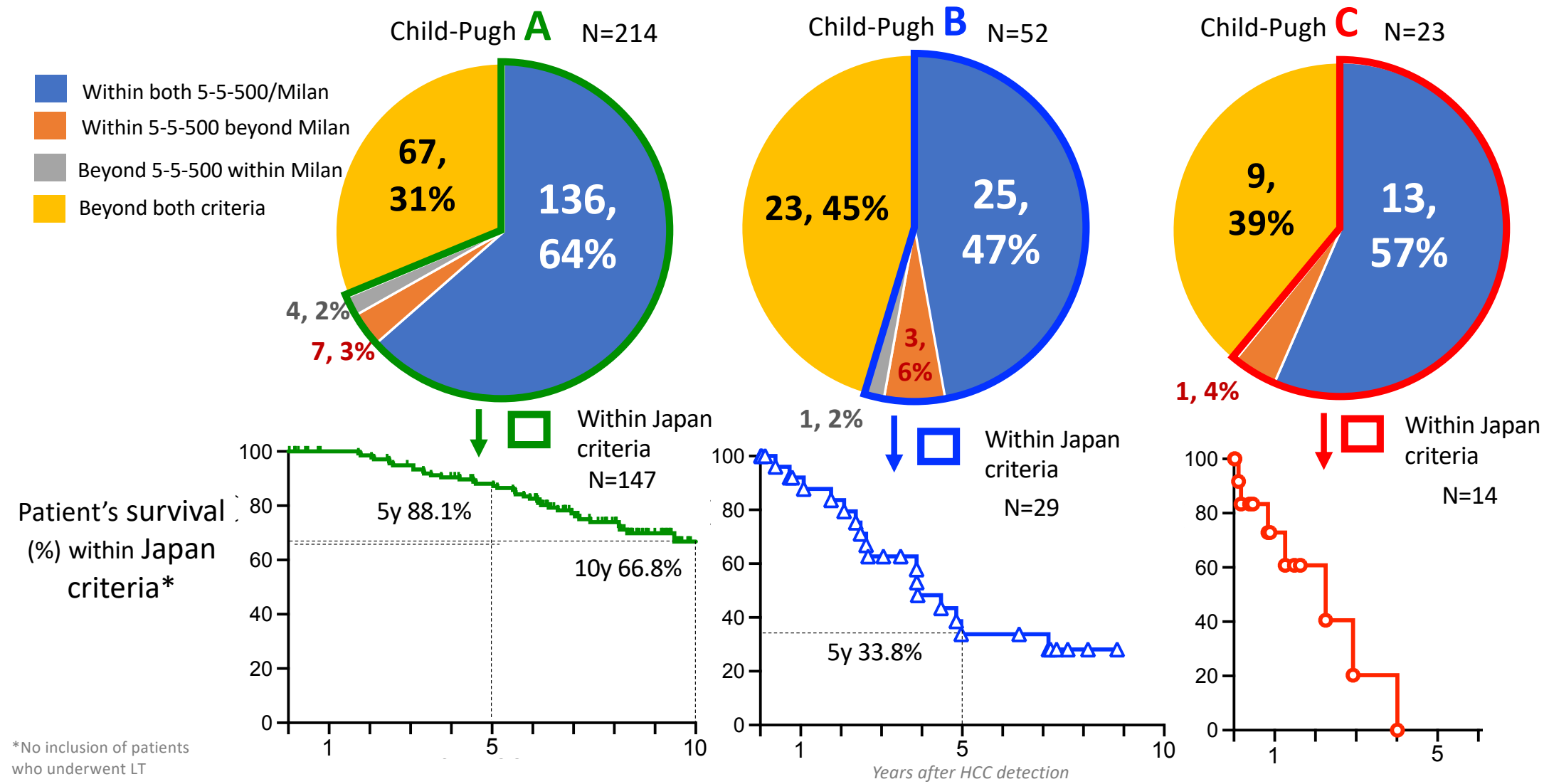
N=289

Patient's demographics at HCC detection.

	Patients n=289
Age	**59.7** (23.8-65.9)
Male	**248** (**85.8**%)
Primary liver disease **HBV** / **HCV** / **EtOH** / **MASH**	**102** (**35.3**%) / **90** (**31.1**%) / **56** (**19.4**%) / **19** (**6.6**%)
Primary liver disease **Cryptogenic** / **PBC** / **AIH**	**15** (**5.2**%) / **4** (**1.4**%) / **3** (**1.0**%)
Child-Pugh **A** / **B** / **C**	**214** (**74.0**%) / **52** (**18.0**%) / **23** (**8.0**%)
MELD	**8.0** ± 3.5
Platelet (x10⁴/ml) / **Albumin** (mg/dl) / **T-bil** (mg/dl)	**14.0** ± 6.9 / **3.7** ± 0.7 / **1.3** ± 1.8
AST (IU/L) / **ALT** (IU/L)	**47** (9-323) / **37** (9-275)
PT % / **sCre** (mg/dl)	**82.3** ± 18.0 / **0.82** ± 0.71
NLR	**2.7** ± 2.5
Fib4 index	**3.44** (0.65-33.54)
HCC **Diameter** (mm), maximum	**26.5** (5-210)
Number **1** / **2-3** / **4-5**	**184** (**63.7**%) / **51** (**17.3**%) / **14** (**4.8**%)
6-10 / **>11**	**4** (**1.4**%) / **37** (**12.8**%)
Vascular invasion / **Distant metastasis**	**56** (**19.4**%) / **21** (**7.3**%)
AFP (ng/ml) / **DCP** (mAU/ml)	**13.2** (0.5-1,479,260) / **59.0** (3.2-515,000)
Criteria **Milan** / **Within** / **Beyond**	**179** (**61.9**%) / **110** (**38.1**%)
5-5-500 / **Within** / **Beyond**	**185** (**63.0**%) / **104** (**36.0**%)

mean ± SD or median (range) n (%)

HCC status and survival of HCC within Japan criteria in each Child Pugh classification

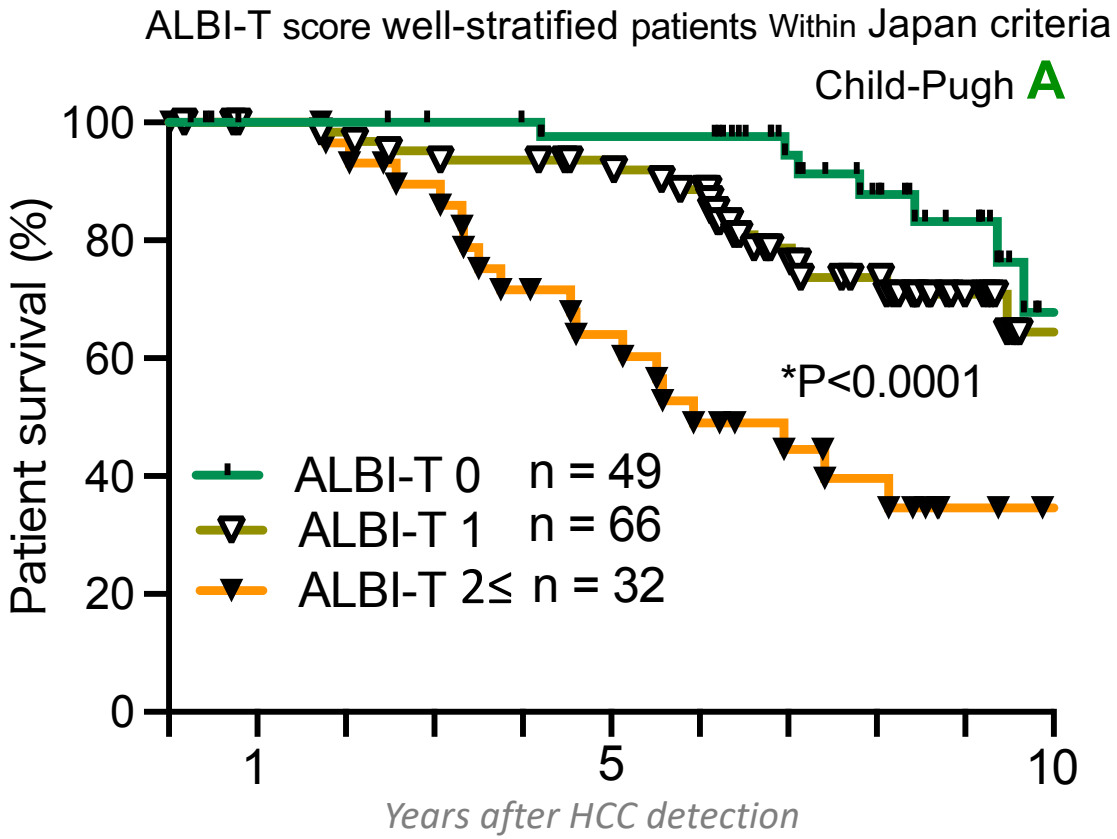


*No inclusion of patients who underwent LT

Prognostic factors of patients in Child-Pugh **A** who met **Japan criteria**

Variable	Univariate		Multivariate	
	HR	P	HR	P
Age	0.320	0.4787		
Sex	0.298	0.5033		
Primary disease	0.247	0.5665		
Child-Pugh score	2.970	*0.0011	1.347	*0.04500
MELD score	0.528	0.2965		
NLR	0.189	0.6468		
FIB-4 index	1.656	*0.0221	0.463	0.34421
ALBI score	2.827	*0.0015		
ALBI grade	2.860	*0.0014		
mALBI grade	2.451	*0.0035		
AFP	0.301	0.5006		
DCP	1.821	*0.0151	1.885	*0.01304
HCC size	1.688	*0.0205		
Number of HCC	3.010	*0.0010		
HCC size + number	2.946	*0.0011		
*TNM-grade	3.929	*0.0001	3.050	*0.00089

*TNM of the Liver Cancer Study Group of Japan, 6th ed.



ALBI-T score	0	1	2	3
ALBI grade	1	2	3	
TNM stage	I	II	III	IV

Conclusion

Indication of LT for HCC within Japan criteria

Absolute Child-Pugh **B** and **C**

Possible Child-Pugh **A**

PTs with **ALBI-T score 2 ≤**