

HTLV-1-Associated Myelopathy in Preoperatively HTLV-1 Negative Recipients after Kidney Transplantation from HTLV-1 Positive Donors

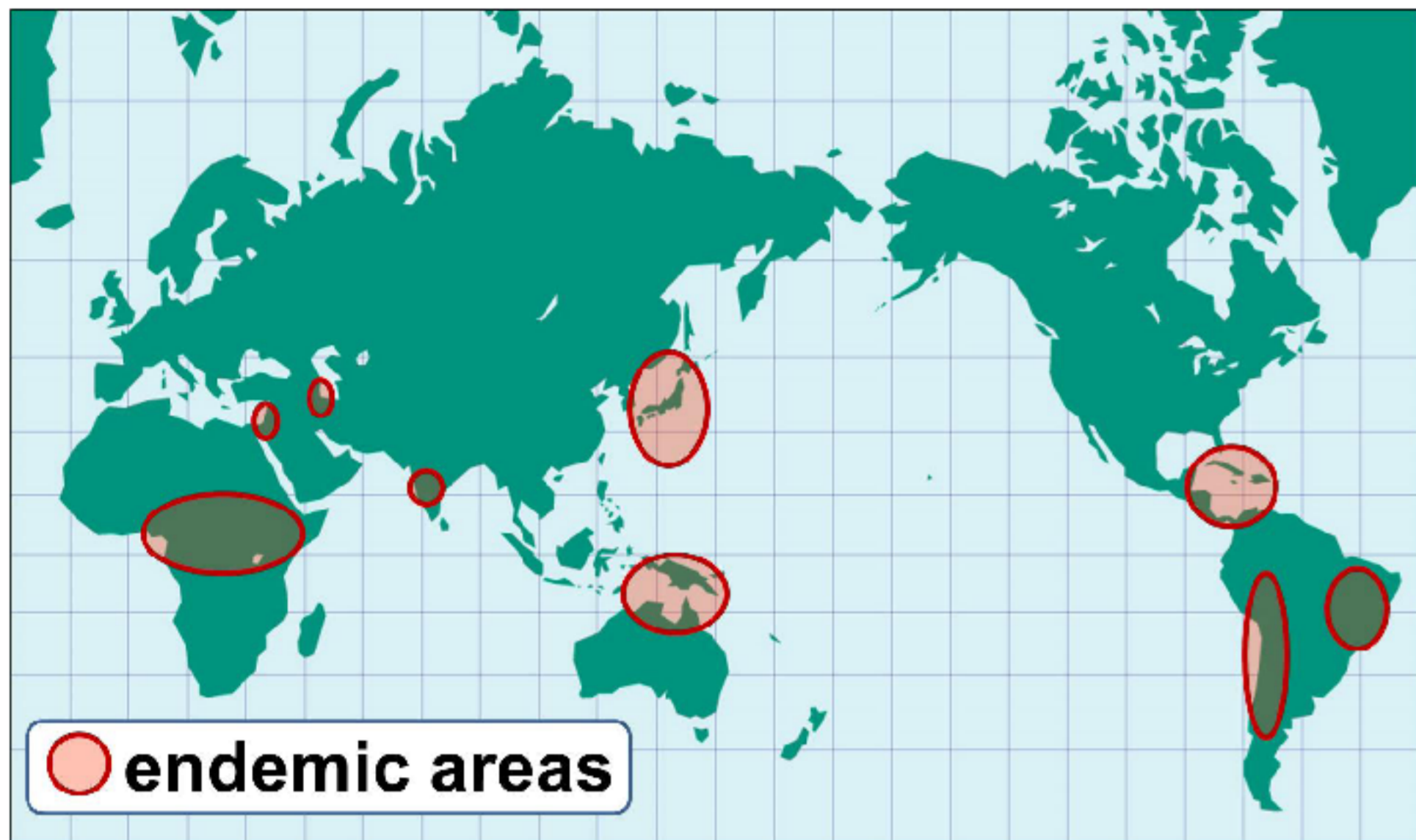
Transplantation

FP887

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HTLV-1 infects 15-20 million people worldwide



What is HTLV-1 ?

(Human T-lymphotropic virus type I)

- ✓ A retrovirus mainly infecting CD4+ T cells
- ✓ Transmission: breast feeding, sexual intercourse, blood transfusion, organ transplant
- ✓ HTLV-1-associated diseases: Adult T cell leukemia/lymphoma (ATL), HTLV-1-associated myelopathy (HAM) → No established treatment and poor prognosis

ATL

- ✓ Pathogenesis: aggressive malignancy of HTLV-1-infected CD4+ T cells mainly occurs in vertically transmitted individuals
- ✓ Lifetime risk in HTLV-1(+) individuals: 2-5%
- ✓ Onset after infection: > 20-40 years
- ✓ Prognosis: median survival < 1year

HAM

- ✓ Pathogenesis: chronic meningoencephalitis mainly in the thoracic spinal cord caused by the infiltrating HTLV-1-infected T cells occurs in vertically and horizontally transmitted individuals
- ✓ Lifetime risk in HTLV-1(+) individuals: 0.3-3.8%
- ✓ Onset after infection: a few months to > 30 years
- ✓ Clinical presentation: slowly progressive spastic paraparesis (gait disturbance), neurogenic bladder disturbance

Descriptions about HTLV-1 in Transplant Guidelines

Guideline	Description
Japanese Society for Transplantation	• Not mentioned
British Transplantation Society 2011	• HTLV serology test should be performed if the donor comes from an endemic area. • Donation: contraindication. (B1)
European Association of Urology 2010	• Not mentioned
Amsterdam forum 2005	• HTLV serology test: included in the routine screening (but not done in most countries) • Donation: Not mentioned
American Society of Transplantation 2013	• Screening for HTLV-1/2 in deceased donors was discontinued in 2009 • Donation: Not contraindicated

Purpose

- ✓ Although some preoperatively HTLV-1 (-) recipients (R-) develop HAM after kidney transplant (KTx) from HTLV-1 (+) donors (D+), D+/R- KTx is not contraindicated in most countries including Japan.
- ✓ The aim of this study is to clarify the characteristics and the incidence of HAM in D+/R- KTx recipients in Japan.

Methods

Subjects

Recipients of living donor D+/R- KTx performed in Japan between 2000 and 2013

1) The characteristics of HAM in D+/R- KTx recipients

D+/R- KTx has never been performed in our hospital, however, HAM outpatient clinic in our hospital has been consulted on HAM patients by other hospitals. Therefore, we extracted the data on those patients from the medical records in our hospital.

2) The incidence of HAM in D+/R- KTx recipients

The estimated incidence of HAM = (the number of HAM) / (the number of D+/R- KTx)

The number of HAM includes HAM patients referred to us.

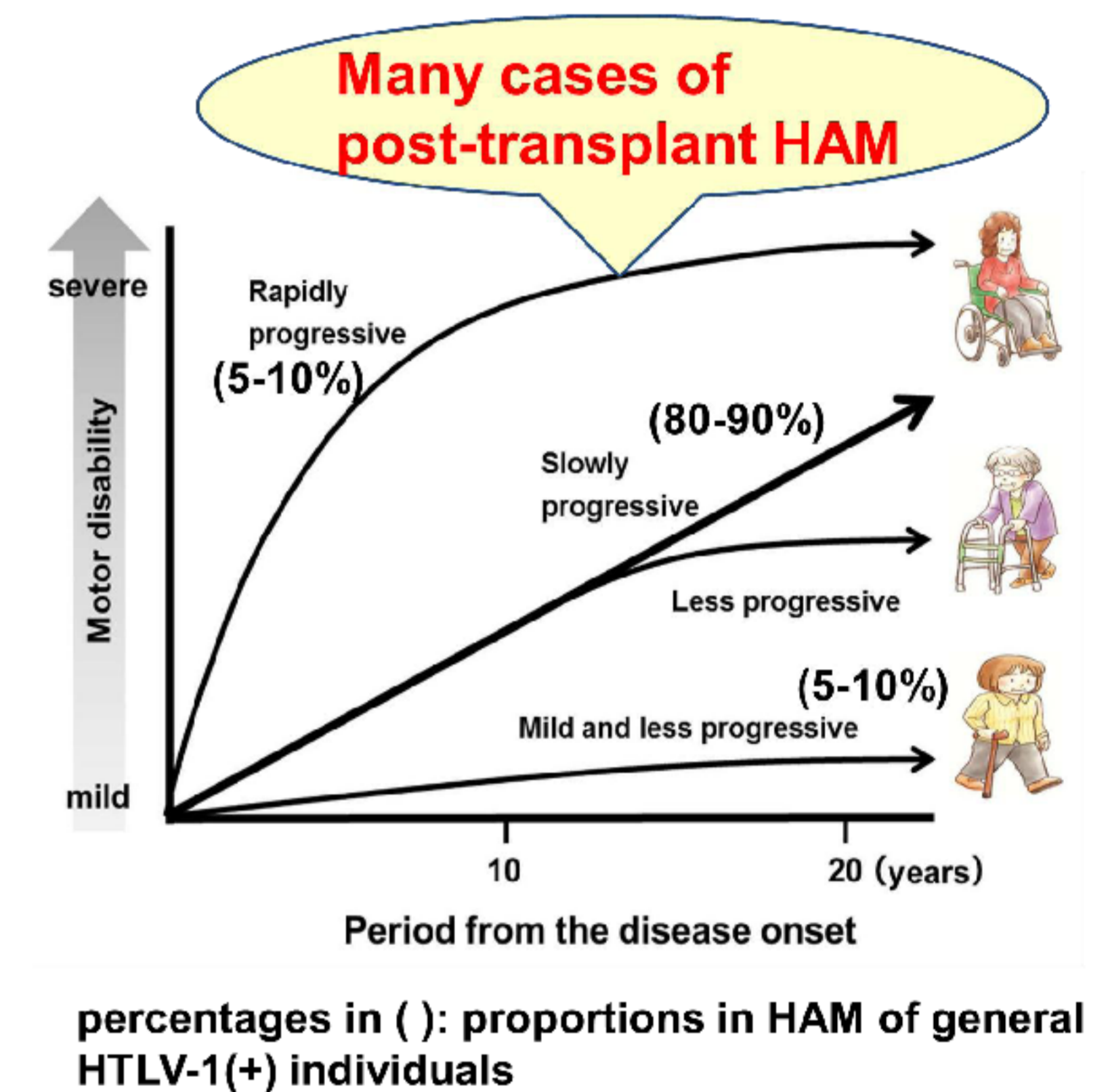
We estimated the number of D+/R- KTx using the Japanese Renal Transplant Registry data.

Because the number of D+, but not that of D+/R- KTx, was mentioned in the registry data, the number of D+ was substituted for the number of D+/R- KTx.

Result 1: HAM patients in D+/R- KTx recipients

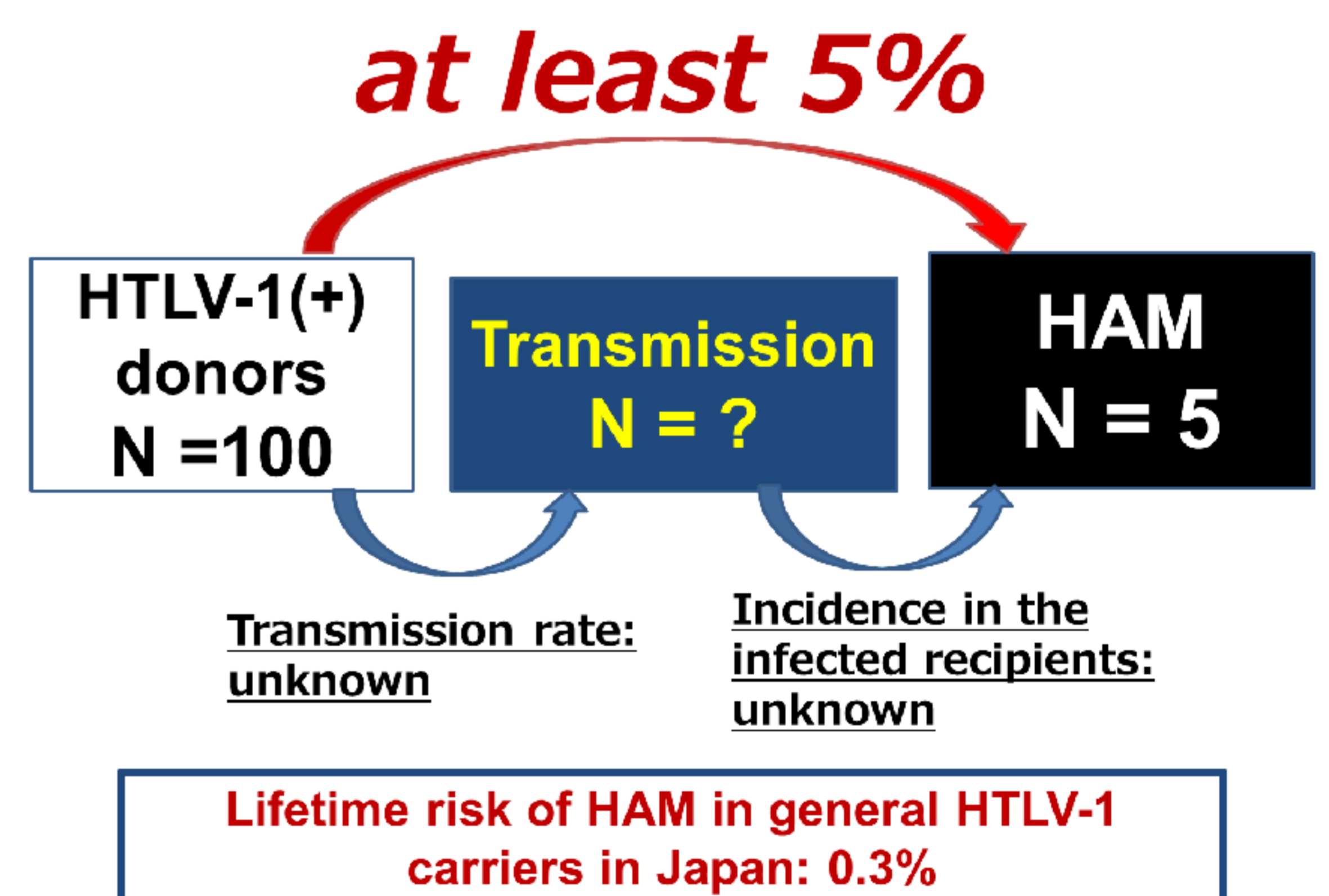
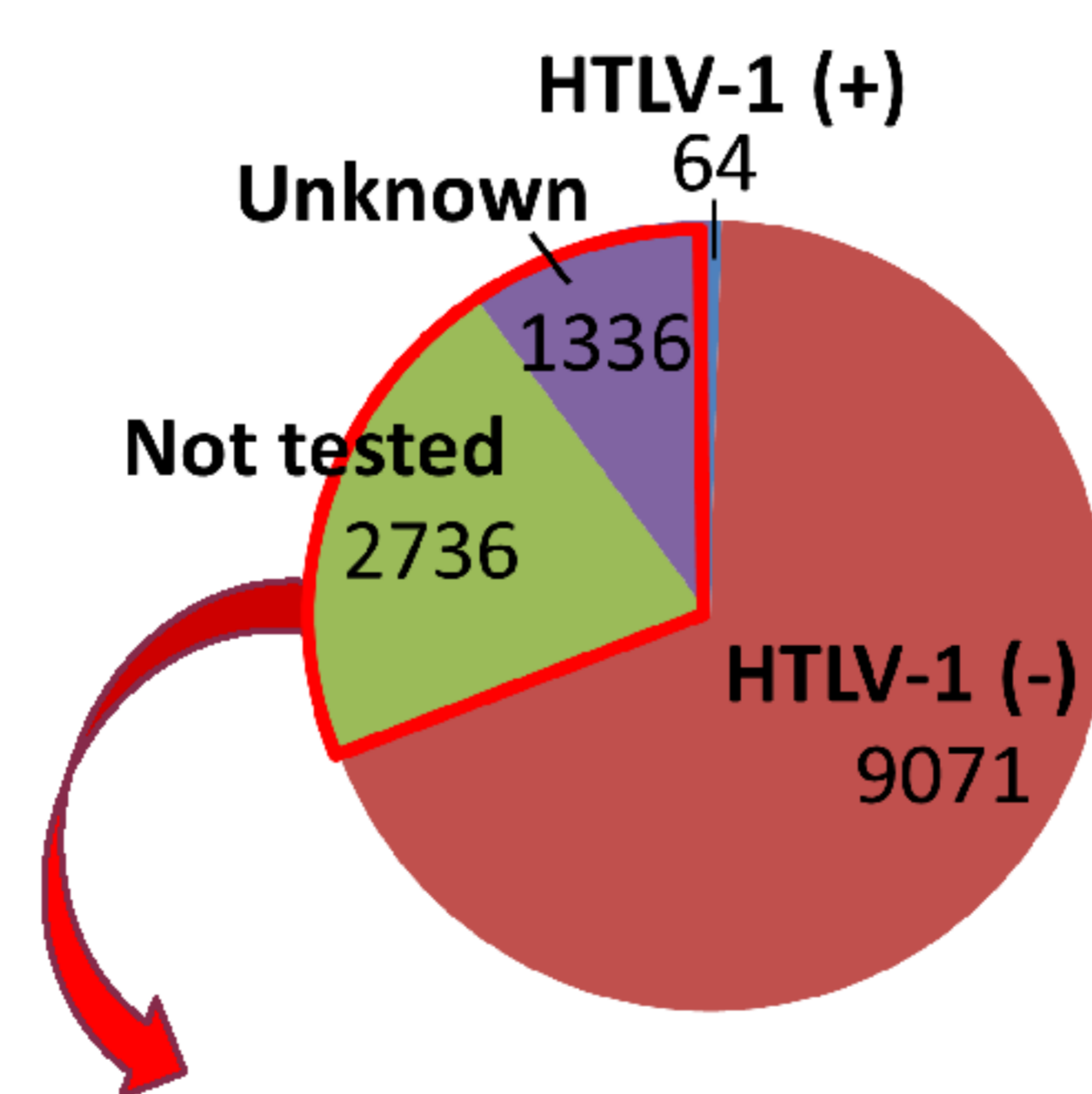
All of 5 patients developed HAM shortly after KTx and rapidly fell into severe gait disturbance

case	Age at KTx	Time from KTx to onset	Progression of HAM
1	66	< 1 year	Cannot walk and need a wheel chair within 3 months
2	61	< 1 year	Cannot walk more than 5 m within 1 year
3	49	2 years	Need two canes within 1 year
4	32	< 2 years	Need a cane within 2 years, then cannot walk
5	32	5 years	Need a cane within 3 years



Result 2: The estimated incidence of HAM

HTLV-1 status of kidney donors
Japanese Renal Transplant Registry
(2000-2013)



The estimated prevalence of HTLV-1 in Japan: men 0.66%, women 1.02% (Satake M., et al. J Med Virol. 84:327,2012)
→ The estimated number of HTLV-1(+) donors in 'unknown' and 'not tested' is 36.
→ The estimated total number of HTLV-1(+) donors is 100 (= 64 + 36).

Conclusions

The safety of D+/R- KTx has not been established.

- ✓ HAM in D+/R- KTx recipients occurred shortly after infection and progressed rapidly.
- ✓ The estimated incidence of HAM was extremely higher than that in general HTLV-1 carriers (0.3% in Japan).

The Japanese Society for Transplantation have begun the investigation of D+/R- KTx recipients.

Conflict of Interest Authors declare no conflict of interest regarding the contents of this study.

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M2) Renal transplantation. Clinical.

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