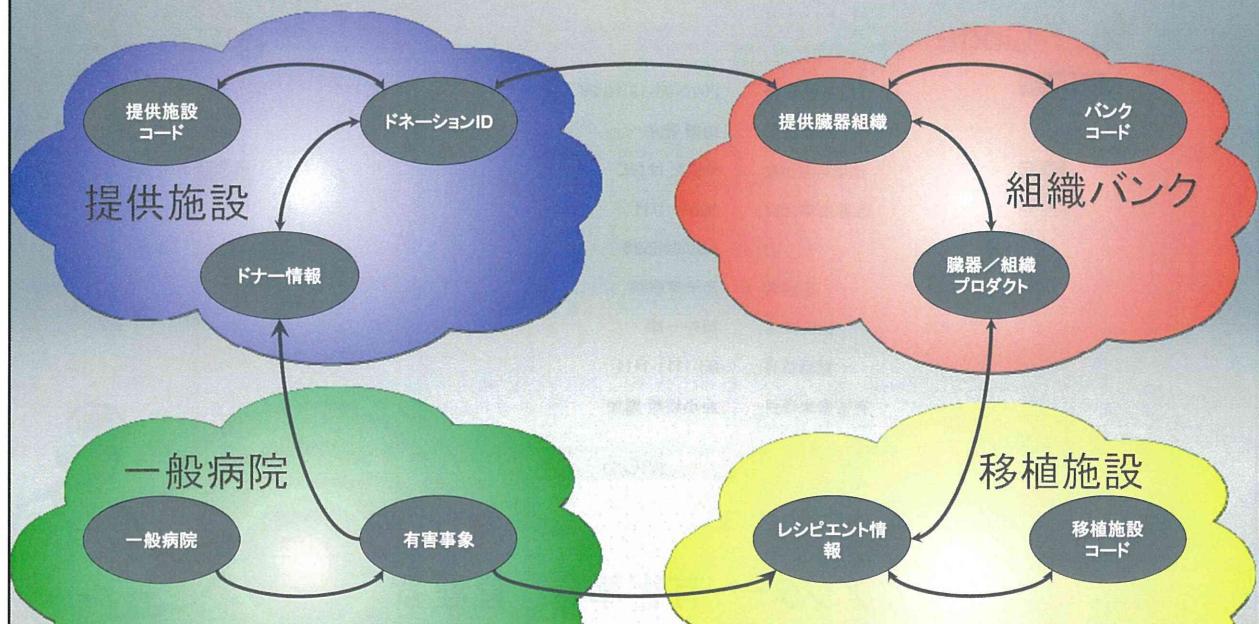


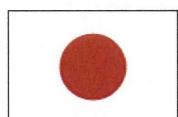
移植関連データの連携が完成



VI. 学会発表・説明会資料

1. 新たな腎移植登録システム インターネット登録へ
2. Evolution of Registry and Tracking System for Organ Transplantation in Japan
3. Mieno M, Yagisawa T, Yuzawa K, Takahara S. Multistate time-to-event modelling for kidney transplantation registry data. European congress of epidemiology 2012, Sep 5-8, Porto, Portugal.
4. Yuzawa K, Umehita K, Mieno M, Takahara S. Online registry and tracking system for kidney and liver transplantation in Japan. 24th international congress of the transplantation society. July 15-19, 2012, Berlin, Germany.
5. Mieno M, Yagisawa T, Yuzawa K, Takahara S. Graphical approach in the risk factor analysis for the death with functioning graft in kidney transplantation from Japanese registry data. 12th Congress of the International Society for Organ Donation and Procurement, Nov 21-24 2013, Sydney, Australia.

Evolution of Registry and Tracking System for Organ Transplantation in Japan



Kenji Yuzawa¹, Shiro Takahara², Takeshi Kenmochi³,
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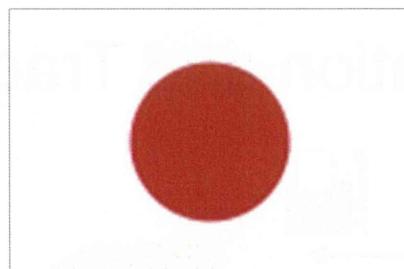
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JAPAN



After great earthquake and Tsunami,
whole Japan country is sunk in grief.

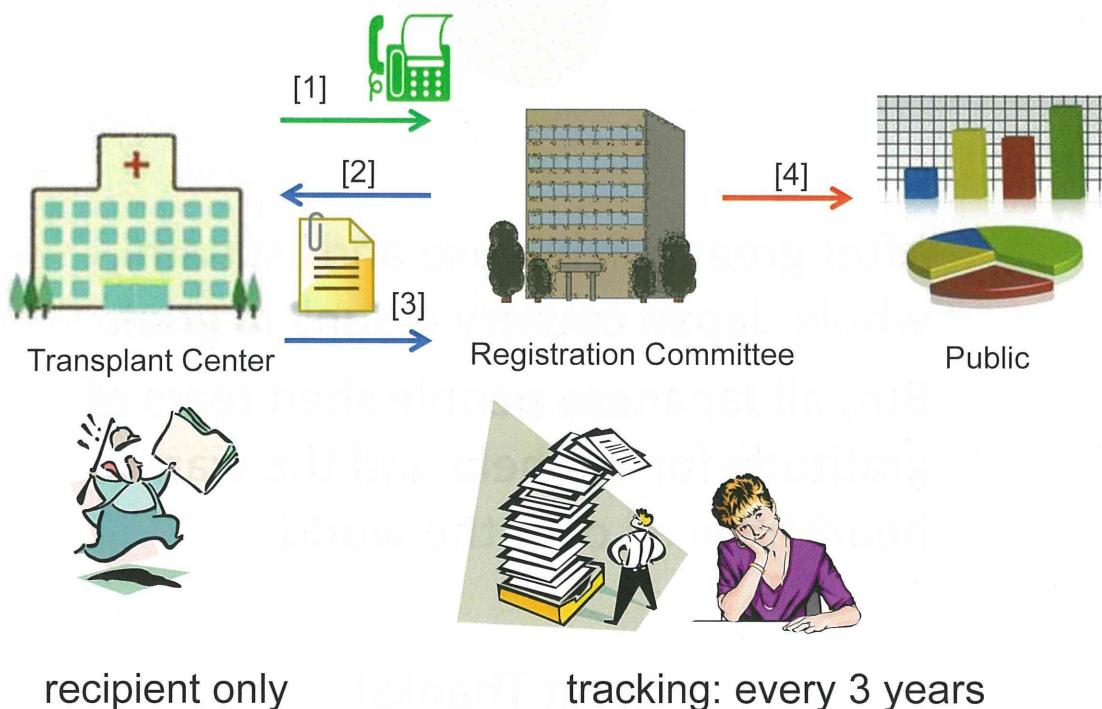
But, all Japanese people shed tears of
gratitude for the help and the warm
heart from all over the world.

Great Thanks!

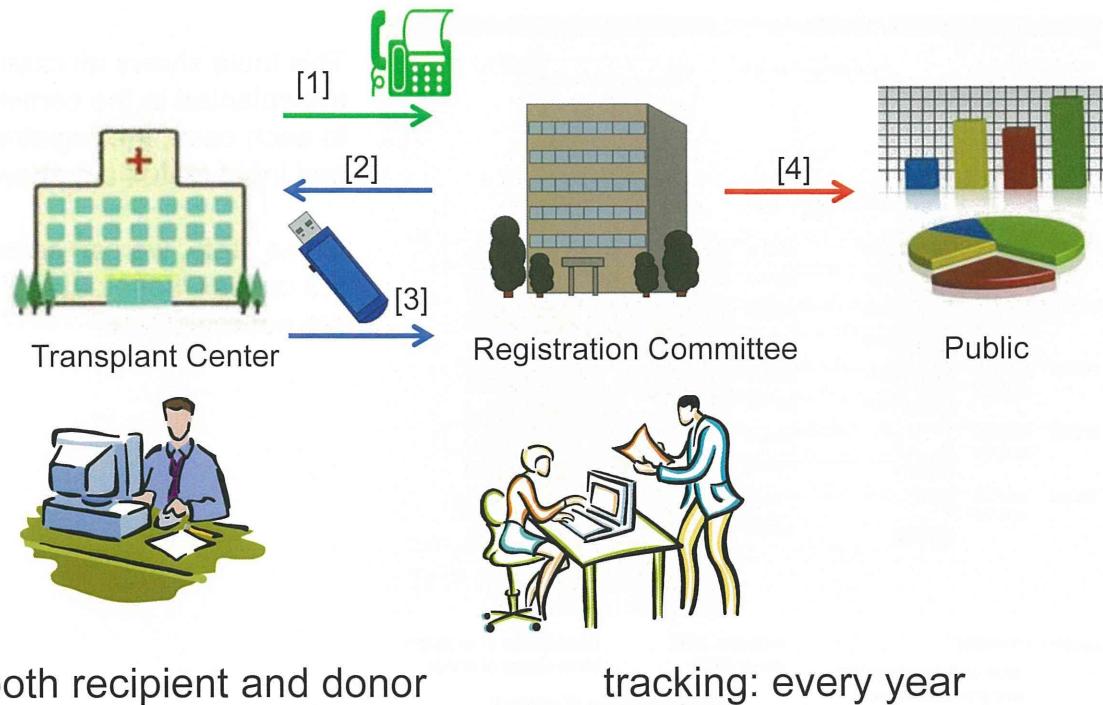
Evolution in Registration System for Organ Transplantation in Japan

- 1st Paper Registration
~2007
- 2nd Electrical Registration
using USB memory
2008~2011 in renal Tx
- 3rd Internet Registration
2011~ in Liver Tx
2012~ in Renal Tx

1st Registration and Tracking System



2nd Registration and Tracking System



JARTRE system

Japan Renal Transplantation Registry



USB memory

with software for registration and tracking
of both all donors and recipients in the
transplant center



Log-in screen of JARTRE

After input of the passwords, Log-in screen appears. On this screen, we can select the case table, center information, set up screens, etc.

Transplant Cases Table

日本腎移植登録 - JATIRE - 移植情報一覧画面

検索
2008 年 腎移植調査

調査年に腎移植を行った例
 調査年にレシピエントが調査中の例
 調査年にドナーが調査中の例
 調査終了例も含めて全ての例

登録件数: 5件 表示件数: 5件

腎移植登録番号	移植日	登録票	レシピエント	被験者内番号	生年月日	追跡状況	入力
20060001	2006/01/01 生体腎移植	確定済 入力	A00001 E00001	S50/01/02 S55/02/03	対地診察未回診中 対地診察未回診中	入力待 入力待	レシピエント: 選択入力 ドナー: 選択入力
20060002	2006/10/03 歿腎(脳死)	確定済 入力	C00001 D00001	S25/11/12 S32/12/10	対地診察未回診中 ---	入力待 ---	レシピエント: 選択入力 ドナー: 選択入力
20070001	2007/02/23 生体腎移植	確定済 入力	E00001 F00002	S44/05/12 S53/10/01	対地診察未回診中 対地診察未回診中	入力待 入力待	レシピエント: 選択入力 ドナー: 選択入力
20080001	2008/11/16 生体腎移植	入力待 入力		S34/06/28 S43/02/28	---	---	レシピエント: 選択入力 ドナー: 選択入力
20080002	2008/12/02 歿腎(心停止)	入力待 入力		S28/07/18 S26/04/14	---	---	レシピエント: 選択入力 ドナー: 選択入力

一覧表示 索引表示 閉じる

registered number

date of transplantation
living or cadavericrecipient ID
donor IDrecipient DOB
donor DOBregistration status of recipient
registration status of donorinput status of recipient
input status of donor

This table shows all cases transplanted in the center. In each case, the registration and input status are shown.

In this table, we can select the cases whose data are not registered.

Input Screen for the details of the case

The image displays a complex Japanese medical software interface for managing transplant cases. It features several overlapping windows:

- Top Left Window:** Shows donor information including ID (登録番号: 20060001), date of birth (誕生日: 1950年1月12日), gender (性別: 女性), and blood type (血型: O).
- Top Right Window:** Shows recipient information including ID (登録番号: 20060001b), date of birth (誕生日: 1950年11月12日), gender (性別: 女性), and blood type (血型: O).
- Middle Left Window:** Details about the recipient's medical history, including past medical conditions (既往歴) like hypertension (高血圧) and diabetes (糖尿病), and treatments (治療歴) like antihypertensives (降圧薬).
- Middle Right Window:** Details about the donor's medical history, including past medical conditions (既往歴) like hypertension (高血圧) and diabetes (糖尿病), and treatments (治療歴) like antihypertensives (降圧薬).
- Bottom Left Window:** Laboratory results for the donor, including blood tests (血液検査) such as blood pressure (血圧), glucose (血糖), and liver function tests (肝機能検査).
- Bottom Middle Window:** Laboratory results for the recipient, including blood tests (血液検査) such as blood pressure (血圧), glucose (血糖), and liver function tests (肝機能�査).
- Bottom Right Window:** Details about immunosuppressive therapy (免疫抑制剤), including drug names (カルシニカルセビカ、Cyclosporine), dosages (用量), and administration times (投与時間).

Nationality of both

Number of transplant for recipient

Blood type, HLA,
infectious diseases of both

Status of recipient; cause,
duration, complication of CRF

History of recipient; BTF,
pregnancy, cross match

Status of donor; relationship,
height, weight, BP, history, etc.

Laboratory findings of donor.
In cadaveric donor,
cause of death

Immunosuppressant

Tracking Screen for the recipient

Tracking is performed three months after the operation, one year after, and every year afterward.

The figure consists of four separate windows from a software application, each showing different tracking parameters:

- Recipient Status:** Shows the recipient's vital status (生存) as 'alive' (生存), date of death (死没日), cause of death (死因), and graft survival status (存続).
- Graft Status:** Shows the graft's survival status (存続) as 'survived' (存続), date of rejection (拒絶日), and cause of rejection (拒絶理由).
- Immunosuppressant:** Shows the use of immunosuppressive drugs (免疫抑制薬) such as cyclosporine (シクロスルホネン), tacrolimus (タクロリムス), and mycophenolate mofetil (ミコフェノールモフェチル).
- Graft Functions:** Shows graft function parameters: arterial pressure (動脈圧), venous pressure (静脈圧), graft diameter (移植径), and graft length (移植長).
- Complications:** Shows complications (合併症) such as infection (感染), bleeding (出血), and thrombosis (血栓症).

Status of the recipient; live or dead
in case of death; date and cause of death

Status of the graft; survive or rejected
in case of rejected; date and cause
of rejection

Immunosuppressant

Graft functions

Complications

Tracking Screen for the donor

Tracking is performed three months after the operation, one year after, and every year afterward.

The image displays three separate windows of a Japanese software application, likely a database or tracking system. Each window has a title bar indicating '登録登場' (Registration/Entry) and a '登録番号' (Registration Number) of '20070001'. The windows show different sections of data entry:

- Top Window:** Shows a summary section with a progress bar at the top and several dropdown menus and input fields below.
- Middle Window:** Shows a section titled '社会的状況' (Social Status) with various checkboxes and dropdown menus for information like '性別' (Gender), '年齢' (Age), '学年' (Grade), and '既婚' (Married).
- Bottom Window:** Shows a detailed section titled '検査結果' (Examination Results) with numerous checkboxes for various medical parameters such as '腎臓' (Kidneys), '肝臓' (Liver), '心臓' (Heart), etc., each with specific sub-options.

Status of the donor; live or dead
in case of death; date and cause of death

Mental and physical status,
renal function, BP, and complications

Detailed laboratory findings
including renal functions

Results of JARTRE

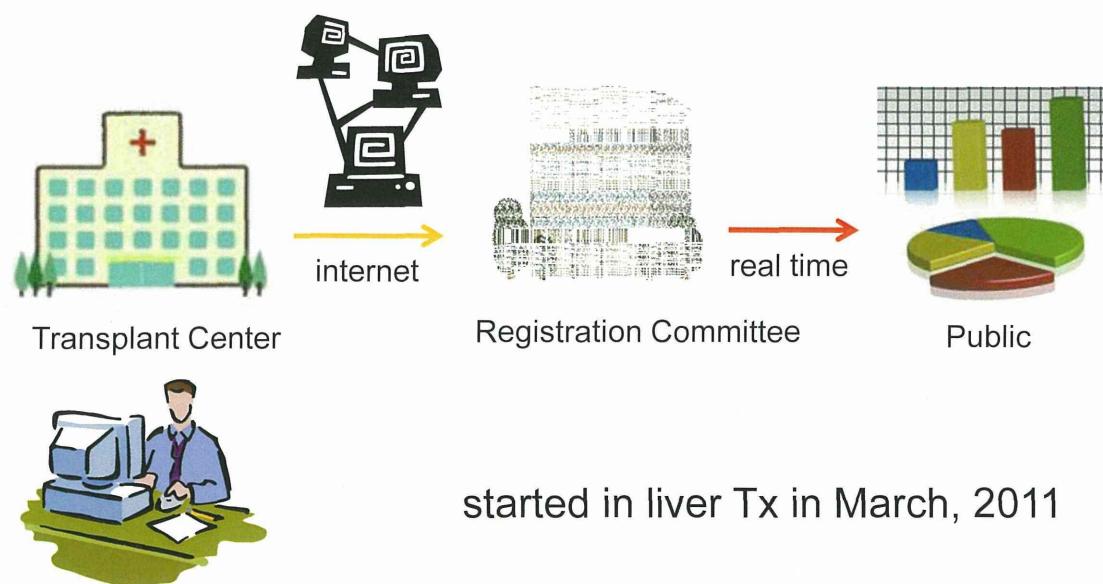
We received 1,201 fax reports of renal transplantation cases in 2008, and **collected 1,176 (97.9%) detailed data** by JARTRE in 2009. And we **collected 12,377 (81.9%) tracking data** of 15,107 past renal transplantation recipients in Japan, excluding 6,003 cases impossible to track previously.

The collection rate of the data by JARTRE was almost same as the previous paper-based registration. The advantages of JARTRE were **a decrease of incomplete data and an improvement of quality of data** in the registry.

Finally, we could announce the statistical data of renal transplantation in Japan to the public quickly.

JARTRE system using USB memory works very well.

3rd Registration and Tracking System



LITRE-J

Liver Tranplantation Registry in Japan



Internet Web system

We can register anywhere with internet
using any computer anytime in the
transplant center

Log-in screen of LITRE-J

In log-in screen, we must input ID of the
transplant center and passwords.

Transplant Cases Table

This table shows all cases transplanted in the center. In each case, the registration and input status are shown.

In this table, we can select the cases whose data are not registered.

Input Screen for the details of the case

The screenshot displays the LITRE-J liver transplant database input screen. It includes several tabs and sections:

- Recipient Information:** Shows basic details like name (Y.A. 6.S), gender (Male), birth date (1977-03-22), and blood type (AB).
- Donor Information:** Shows basic details like name (Y.B. 6.C), gender (Female), birth date (1980-03-11), and blood type (O).
- Medical History:** Includes sections for:
 - Recipient Medical History:** Shows various diseases like HCV, HCV, HCV, and HCV.
 - Donor Medical History:** Shows various diseases like HCV, HCV, HCV, and HCV.
 - HLA Typing:** Shows HLA Type A, B, C, DR, and DRB1.
 - Laboratory Data:** Shows various lab values including ALT, AST, GGT, ALP, and bilirubin.
 - Treatment:** Shows treatment history including immunosuppressants (Azathioprine, Cyclosporine, Tacrolimus, etc.) and their dosages.
- Operational Details:** Shows the status of the transplant (待機中) and other operational parameters.

DOB, gender, ID,
primary cause of liver failure

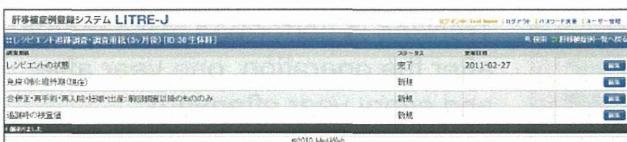
Nationality, blood type, height,
weight, HLA,

Status of recipient, PS,
treatment, laboratory data,
QOL

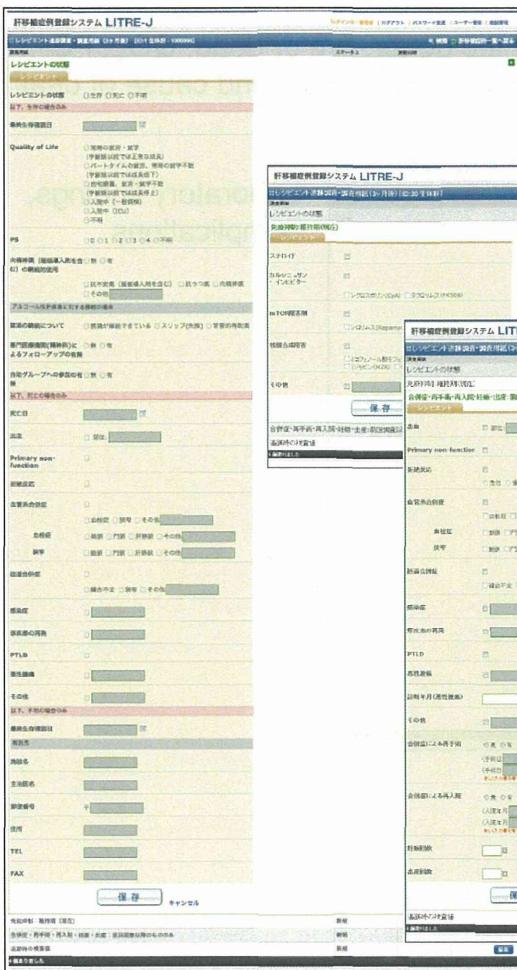
Details of the operations
of both recipient and
donor

More other screen with
Status of donor;
relationship, height,
weight, BP, history,
laboratory findings of
donor.
Immunosuppressant

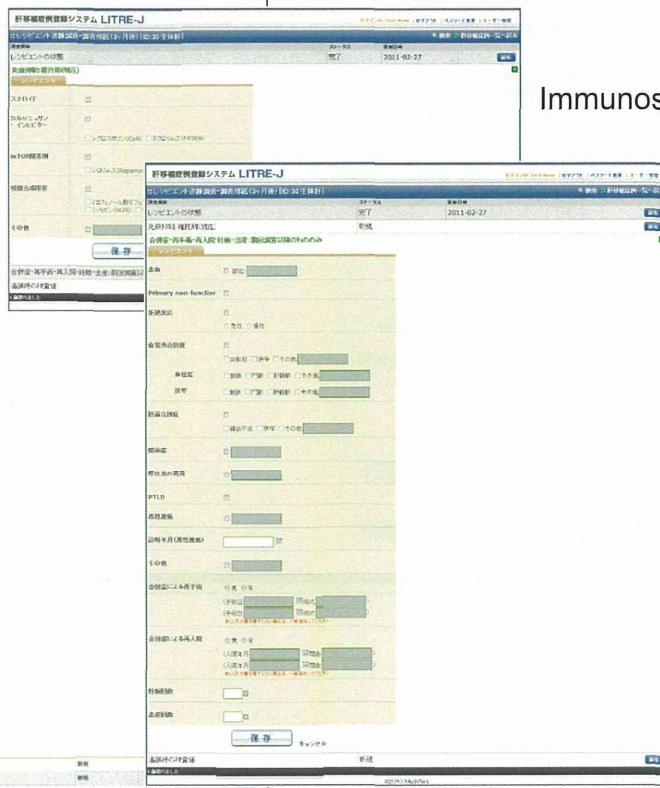
Tracking Screen for the recipient



Tracking is performed three months after the operation, one year after, and every year afterward.



Status of the recipient; live or dead, QOL, PS,
in case of death; date and cause of death



Immunosuppressant

Complications

Tracking Screen for the donor

This screenshot shows the LITRE-J tracking system interface. At the top, it displays the donor's name (中村 勝也), age (30歳), gender (男), and date of birth (1983-01-01). Below this, there are sections for '生存確認' (Survival Confirmation) and 'QOL/PS' (Quality of Life/Performance Status). The survival status is listed as '生存' (Alive) with a note '健在' (Alive). The QOL/PS section includes a 'QOL' scale from 0 to 100 and a 'PS' scale from 0 to 4, both currently at 100.

Tracking is performed three months after the operation, one year after, and every year afterward.

The left screenshot shows the 'Laboratory Findings' section of the LITRE-J system. It lists various blood test results: T-Bil (10 mg/dL), D-Bil (10 mg/dL), AST (10 U/L), ALT (10 U/L), and PT (10%). It also includes sections for '既往歴' (Past History) and '既往疾患' (Past Diseases).

The right screenshot shows the 'Complications' section. It lists complications such as '肝硬変' (Liver cirrhosis), '食道靜脈瘤' (Esophageal varices), '門脈高血圧症' (Portal hypertension), '食道靜脈瘤破裂' (Esophageal variceal hemorrhage), and '食道癌' (Esophageal cancer). There are also sections for '既往歴' (Past History) and '既往疾患' (Past Diseases).

Status of the donor; live or dead, QOL, PS, in case of death; date and cause of death

Laboratory findings, complications

Results of LITRE-J

We started LITRE-J in March 2011. We could collect the registration and tracking data of liver transplantation without any problems. We could not estimate the result of LITRE-J now.

Next Step for Registration

We are now establishing the internet registration system for renal transplantation like LITRE-J instead of JARTRE and planning to start it in January 2012.

Now, we are planning to establish the complete internet registration and tracking system for all organ transplantation in Japan.

References

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- The Japanese Society for Clinical Renal Transplantation, The Japan Society for Transplantation. Annual Progress Report from the Japanese Renal Transplant Registry, Number of Renal Transplantation in 2008, Part 2. Japanese Journal of Transplantation 2009; 44(6): 548-558.
- Shiro Takahara: Reports on "The Research for Establishment of Case Registration and Tracking System and for Improvement of Safety and QOL of Donor and Recipient in Renal Transplantation" by Grant-in-Aid for Research on Human Genome, Tissue Engineering Food Biotechnology, Health and Labour Sciences Research Grants, Ministry of Health, Labour and Welfare of Japan, 2010
- Yuzawa K, Takahara S, Kanmochi T, Takahashi K, Teraoka S. New registry and tracking system for renal transplantation in Japan. Transplant Proc. 2010; 42(10):4010-3.



JSCRT

新たな腎移植新登録システム インターネット登録へ

日本臨床腎移植学会 登録委員会

日本移植学会 登録委員会

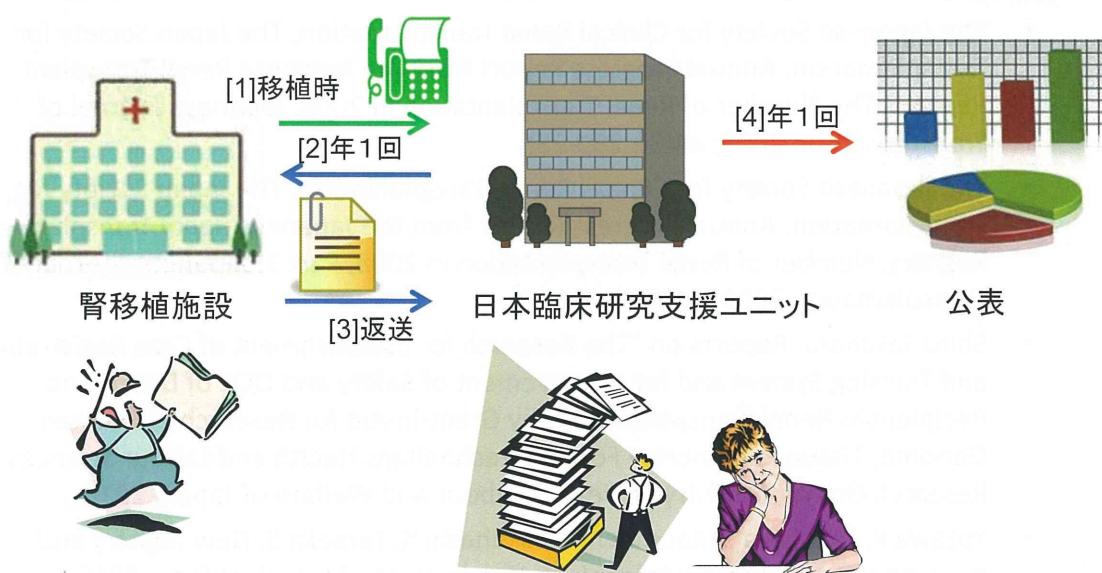
国立病院機構 水戸医療センター 腸器移植外科 湯沢賢治

2012年2月2日

第45回日本臨床腎移植学会 軽井沢

JSCRT

旧来の登録用紙による移植登録



レシピエントのみ

追跡調査は3年おき

新システムの必要性



- 2004年 Amsterdam Forum
- 2008年 Istanbul Summit
全ての生体ドナーの生涯にわたる追跡
- 電子化・簡素化
紙に記入、手計算で統計、からの脱却
- 迅速・詳細な統計の公表
毎年、web上で発表

厚生労働科学研究費補助金



平成20～22年度

腎臓移植の成績向上をめざした臨床データ解析を目的とした症例登録と追跡制度の確立並びにドナー及びレシピエントの安全性確保とQOL向上に関する研究

研究代表者 高原史郎

研究分担者 湯沢賢治、鈴木律朗、高橋公太、剣持 敬、杉谷 篤、
北田秀久、篠崎尚史、渡井至彦、八木澤隆、三重野牧子、
市丸直嗣、木内哲也、梅下浩司、菅原寧彥、武富紹信、
古川博之、八木孝仁、江川裕人



JARTRE system

Japan Renal Transplantation Registry



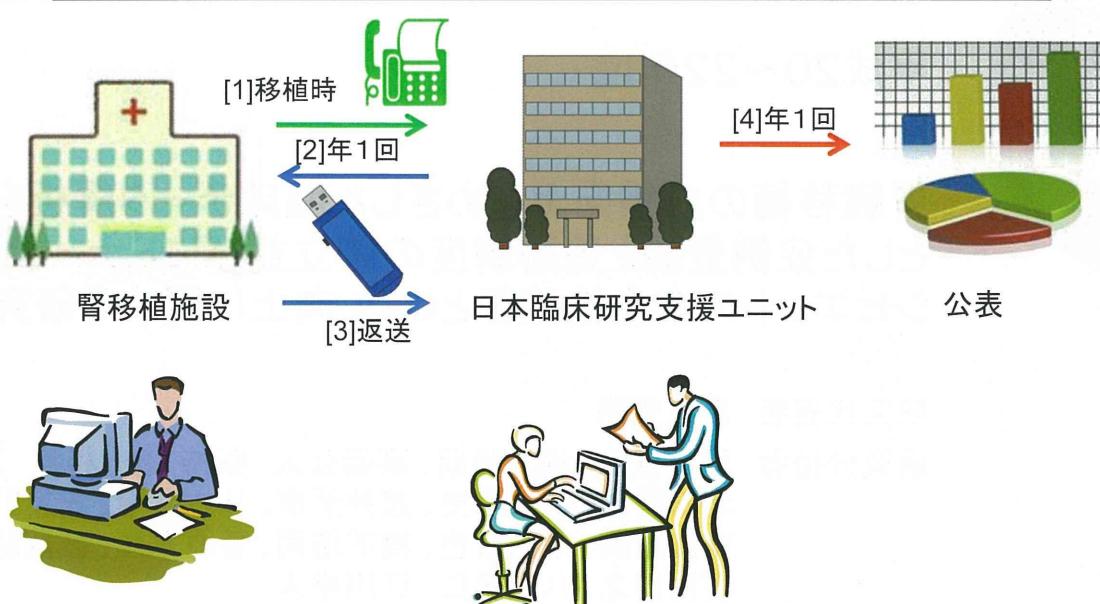
- USBメモリー
- ドナーも登録
- 毎年追跡調査



施設番号、パスワード入力
→ ログイン画面



JARTREによる移植登録



レシピエントとドナー

追跡調査は毎年



JARTREのメリット

- 入力の簡素化
- 詳細なデータの収集(必須項目、任意項目)
- 入力ミスの減少(入力チェック機能)
- セキュリティー機能を組み込み暗号化
- 詳細な統計解析データの迅速な公表
- 各施設ごとの全腎移植症例データを、USBメモリーに納めて各施設に返却し、各施設で統計解析可能に

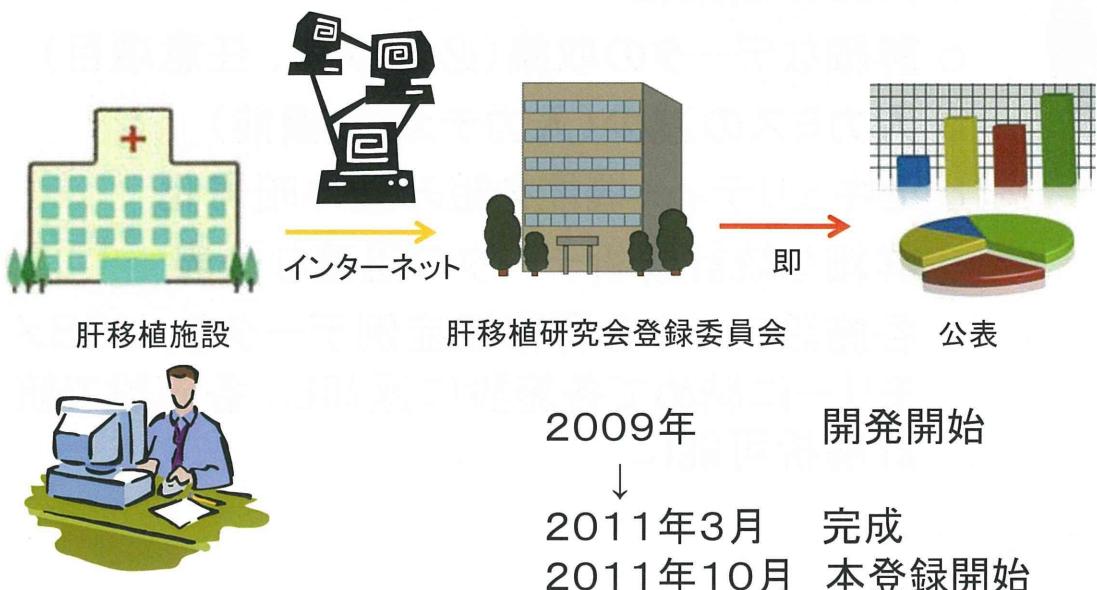


これまでのスケジュール

2008年1月～	実施登録(Rのみ)はFAX
12月まで	各施設の倫理委員会でドナー登録の認可
2009年1月～	実施登録(R & D)はFAX(新用紙)
2月	2008年の症例(Rのみ)の詳細登録 2007年末までの全症例(R)の追跡調査を 「USBメモリー」を用いて行う
2010年2月	実施登録(R & D)はFAX 2009年の症例(R & D)の詳細登録 2008年末までの全症例(R)の追跡調査 2008年1年分ドナーの追跡調査を 「USBメモリー」を用いて行う

肝移植登録

インターネットを用いたWeb登録システム



LITRE-J

Liver Transplantation Registry in Japan



インターネットを用いたWeb登録

インターネット回線があれば、何処でも、
何時でも、登録可能

ログイン画面
ユーザー名、パスワード入力