Current Status of Organ Donation in Japan

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Disclosures
I have nothing to disclose

Japanese Red Cross Kumamoto Hospital
Organ Transplantation in Japan

2014

<table>
<thead>
<tr>
<th>Organ</th>
<th>Living Donor</th>
<th>Deceased Donor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney</td>
<td>1472</td>
<td>126</td>
</tr>
<tr>
<td>Liver</td>
<td>428</td>
<td>45</td>
</tr>
<tr>
<td>Lung</td>
<td>20</td>
<td>41</td>
</tr>
<tr>
<td>Heart</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>Pancreas</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>Small Intestine</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2199</strong></td>
<td></td>
</tr>
</tbody>
</table>

Deceased Organ Donation

2006

- Population: 127 M
- Organ Donation: 112

Deceased Organ Donations in Japan

1997 Organ Transplant Law
2008 Istanbul Declaration
2010 Revised Organ Transplant Law

Worldwide ORGAN DONORS 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Deceased</th>
<th>Living</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spain</td>
<td>39.7</td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>45.4</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>28.5</td>
<td>18.8</td>
</tr>
<tr>
<td>Japan</td>
<td>0.7</td>
<td>12.5</td>
</tr>
</tbody>
</table>

PMP: PER MILLION POPULATION
Maximizing the donation

- Medical consultant
  Japan Organ Transplant Network started medical consultant system in 2002
- Expanding the criteria for donation
  Utilization of marginal organs

Medical Consultant

Evaluation
  Especially for heart and lung.
  Decides whether it is suitable for donation or not.

Management
  Organ Quality.

Expanding the criteria for donation

- Heart; 77% marginal donor
  Bench replacement of donor aortic valve before heart transplantation
- Pancreas donor
  63% over 40 years old
  59% died of cerebrovascular attack
  Over 50% required multiple catecholamine treatments at the agonal phase.

Common Kidney Donor Characteristics in Japan

- 60 yo, M
- Cerebrovascular stroke, no diabetes
- Cr 1.3 mg/dl
- Ht 170.5cm BW 68.8kg BMI 23.7
- HCV negative
- DCD (with 1 week of Agonal phase*)
  *Ventilator withdrawal is not allowed in Japan.
  KDPI 97%!
Organs Transplanted per donor; PMP (brain dead donor)

6.8 3.0


Expansion of donor pool using living donors

- ABO-/HLA-incompatible transplantation

Renal replacement therapy in Japan

Av. DCD Kidney in Japan (5y GS 77%)
KDPI 97% kidney in the US (5y GS 50%)

ABO incompatible RTx study group 2009
### Renal replacement therapy in the world 2009

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Dialysis patients (1,000)</th>
<th>% of total dialysis pts</th>
<th>Prevalence of HD (per population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>452</td>
<td>18%</td>
<td>1,420</td>
</tr>
<tr>
<td>2</td>
<td>China</td>
<td>330</td>
<td>13%</td>
<td>245</td>
</tr>
<tr>
<td>3</td>
<td>Japan</td>
<td>315</td>
<td>12%</td>
<td>2,505</td>
</tr>
<tr>
<td>4</td>
<td>Brazil</td>
<td>116</td>
<td>5%</td>
<td>575</td>
</tr>
<tr>
<td>5</td>
<td>Mexico</td>
<td>96</td>
<td>4%</td>
<td>820</td>
</tr>
</tbody>
</table>

**Average waiting time**

15-20 years!!

*In order to get kidney <8 years... Need 9 times more donors*

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**What makes Transplant slow in Japan?**

- The Wada Heart Transplant 1968
- Cultural Issue
- Developing Procurment System
- Conflict of Interests

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**The Wada Heart Transplant 1968**

- First heart transplant in Japan.
- Recipient died POD 83.
- Brain death diagnosis by transplant surgeon.

*Lack of transparency caused distrust of physicians and organ transplant...*
Cultural issue

“Ritually preparing the body, dressing the dead in white and applying make-up for the trip to the afterlife”

Developing Procurement System

Japan
- No referral until the declaration of brain death
- No legislation
- Mostly done by charged doctors

Overseas-developed countries
- Identification of the potential donor
- Evaluation by criteria
- Suggesting Organ donation
- Informed consent
- Organ donation

- Early referral to OPO by Nurses
- Legislation - Support by government
- In-house coordinators - OPO involvement

DBD DONOR PROCUREMENT:
Surgeons bring EVERYTHING, book flights, go there, recover organ and transplant afterwards...
4-5 DOCTORS per team!
**Conflict of Interests**

- Nephrologists own dialysis center...
- Very low referral rates to transplant center...

**Willingness to donate**

Note their willingness on the card

<table>
<thead>
<tr>
<th>Year</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>4</td>
</tr>
<tr>
<td>2013</td>
<td>16</td>
</tr>
<tr>
<td>2016</td>
<td>18</td>
</tr>
</tbody>
</table>

**Subjects in 2016**

- Increase Organ Donation/Transplantation
- Suggest Organ Donation to Donor Family
- Detect Willingness to Donate Potential Donor
- Support Donation System
- Show Willingness
- Talk about Donation With Family
- Education of Organ Donation/Transplantation

**Think for Action**
The 2016 Kumamoto Earthquake

14th April 21:26 M6.5
16th April 1:25 M7.3
55 dead

Summary

- Low deceased donation rate in Japan.
- Past incident, cultural issue, developing procurement system and conflict of interests affect the donation rate.
- Breakthrough is coming...

Thank you.