The 38th Annual Meeting of EBMT
Joint Session
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Consequences of earth quake on unrelated transplants in Japan

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Distribution of transplant teams in Japan and the region stricken by the earthquake

From JSHCT Annual Report of Nationwide Survey 2007
Actions at the earthquake
JMDP

1. Status of damage at JMDP headquarter
2. Urgent action for the on-going coordination
3. Announcements
4. Statement of urgent coordination for probable victims of radiation injury
5. Actions for the future
1. Status of damage at JMDP headquarter in Tokyo on March 11, 2011

Seismic intensity: M5~6 (Tohoku area: M9)
Office: Falling down of the ceiling and some cabinets
                   Cracking of the wall and windows
                   Scattering of papers on the desks
Server room: Intact (because of the reinforcement to earthquake)
No casualties on employees (40)
   After putting important papers into cabinets, the employees once took refuge through stairs from 7th and 8th floors.
   Their works were resumed within the day, the employees then, went back home on foot.
The headquarter office in Tokyo March 11, 2011
Server room
2. Urgent action for the on-going coordination(1)

As of March 11, 2011

- Recipients under pre-conditioning in whole through the country: 43 (All were confirmed to be safe.)
  Recipients in the stricken area: 1

- Corresponding donors: 43 donors were confirmed to be safe in whole through the country by March 15
  Donors in the stricken area: 2
2. Urgent action for the on-going coordination (2)

- **One recipient** in the stricken area BMT was planed on March 15:
The transplant team kept the ability to perform BMT therefore, marrow was harvested, transferred by plane and hospital car under the special fuel supply (Special measurements and approval from the government such as special vehicle with fuel supply, doctor’s helicopter and defense army’s airplane had been approved).

- **Two donors** in the stricken area:
  - **Donor 1**: Harvest (planed on March 15) was postponed because of the uncertainty of transportation. The recipient received CBSCT.
  - **Donor 2**: Harvest (planed on March 16) was postponed because of the damage of the harvest center. The recipient received CBSCT.
2. Urgent action for the on-going coordination (3)

Recipients whose Day 0 were fixed but before preconditioning in the stricken area: 4

Recipient 1: Transplanted on the schedule by transplant team in the stricken area.

Recipient 2: Transplanted two months behind the schedule by transplant team in the stricken area.

Recipient 3: Transplanted on the schedule by transplant team in other areas.

Recipient 4: Transplanted on the schedule by transplant team in other areas.
2. Urgent action for the on-going coordination (4)

Donors whose Day 0 were fixed between March 14 and 25, but the corresponding recipients were before preconditioning:

- 23 in whole through the country
- 2 in the stricken area

Donor 1: Harvest (planned on March 18) was postponed because of the decision of the transplant team to switch a donor in another area. UR-BMT was finally performed on May 17.

Donor 2: Marrow was not harvested from this donor as the recipient’s disease status improved.
2. Urgent action for the on-going coordination (5)

Donors who were expected to donate marrows from March 28 to the end of June in the stricken area:

- **9**

  - **4 donors**: Marrow was harvested by harvest teams in the stricken area on the schedule.
  
  - **3 donors**: Harvest from these donors was postponed. Transplant teams chose the donors in other areas. UR-BMTs were performed 12-45 days behind the schedule.

  - **1 donor**: Harvest from this donor was postponed. Transplant team chose CBSCT.

  - **1 donor**: Still under the coordination (As of March 27, 2012)
March 14: Announced that

1. Confirmation of the safety of 42 donors whose partners were under the preconditioning,

2. Postponement of confirmatory typing, preoperative health check, autologous RBC storage and final informed consent in stricken area (Iwate, Miyagi, Fukushima),

3. Postponement of new patient registration and donor search (because of the shortage of electricity supply in Tokyo),

4. Urgent coordination would be exceptional.
March 16: Announced that

1. Confirmation of safety of additional 22 donors who were expected to donate BM by the end of March,

2. Resume of new patient registration and donor search,

3. Postponement of new coordination and confirmatory typing for the donors in the stricken (Iwate, Miyagi, Fukushima) and peri-stricken area (Aomori, Akita, Yamagata) till the traffic were normalized,

4. Substitution of coordination in the stricken area by Tokyo headquarter.
3. Announcement (3)

April 14: Announced that

1. To continue the postponement of new coordination and confirmatory typing for the donors in the stricken (Iwate, Miyagi, Fukushima) and peri-stricken area (Aomori, Akita, Yamagata) because of frequent aftershocks,

2. To continue the postponement of confirmatory typing, preoperative health check, autologous RBC storage and final informed consent in stricken area (Miyagi, Fukushima),

3. Resume of coordination in the stricken area by Tohoku Branch,

4. Asking the cooperation of BM harvest to institutes in other area.
April 28: Announced that

1. To resume new coordination and confirmatory typing for the donors in the peri-stricken area (Aomori, Akita, Yamagata),

2. To continue the postponement of confirmatory typing, preoperative health check, autologous RBC storage and final informed consent in stricken area (Miyagi, Fukushima),

3. Resume of sample storage project.
3. Announcement (5)

**June 8:** Announced

To *resume* new coordination, confirmatory typing, preoperative health check, autologous RBC storage and final informed consent in the stricken area *(Miyagi, Fukushima)*,
4. Statement of urgent coordination for probable victims of radiation injury in Fukushima

1. The workers’ (Defense Army, fire men, TEPCO) effort is that to abolish the expansion of radiation damage and to protect Japanese people therefore, to save them in the probable radiation injury should be a national project.

2. JMDP is ready to initiate urgent coordination when UR-BMT becomes necessary for the workers.

3. When the urgent coordination is required, JMDP will make efforts without bothering usual coordination.
5. For the future

1. JMDP is making a new back up system for the central coordination (including recipients information) in KDDI Data Center in Tokyo as well as keeping the current temporal back up system in Osaka.

2. JMDP is making a simulation to make Tokyo headquarter move to Osaka area if it is seriously damaged.

3. JMDP has made an algorithm how to coordinate patients and donors under a wide area earthquake.
Actions at the earthquake
JCBBN

1. Status of damage at Miyagi CBB, one of 11 members of JCBBN

2. Statement from JCBBN
Japan Cord Blood Bank Network

Tokyo Red Cross (3,392)

Tokai (3,129)

Kanagawa (1,610)

Tokai University (5,531)

Miyagi (894)

Hyogo (3,581)

Keihan (1,990)

Chugoku-Shikoku (2,403)

Fukuoka Red Cross (2,061)

Hokkaido (2,283)

Total: 32,444 units (Oct 25, 2011)
Status of damage at Miyagi CBB in Sendai on March 11

Seismic intensity: M9

Office: (See the picture)

Nitrogen tanks: Intact (because tanks were connected to each others by hard belts and casters under the tanks absorbed shaking shock. See pictures)

Stored cord blood: 894 units were intact but they were not subjected for open search because of the difficulties of transportation.

No casualties on employees (5)
Miyagi Cord Blood Bank

Two days after the earthquake
Evacuated and no communication tools were available
Storage tanks were kept intact, because tanks were connected to each others by hard belts and casters under the tanks absorbed shaking shock.
Statement of urgent supply from JCBBN for probable victims of radiation injury in Fukushima

1. JCBBN will make quick actions to save the workers who were working to abolish the expansion of nuclear contamination.

2. JCBBN will collaborate with MHLW, JMDP and JSHCT when UR-BMT becomes necessary for the workers.

3. When the urgent action is required, JCBBN will make efforts without bothering usual supply.
Actions at the earthquake
JSHCT

- Creation of task team
- Questionnaire to all the member institutes to know the ability to perform extra HSCH & HSCT
- 1st statement
- Paris
- 2nd statement
- London
- Creation of NAC in JSHCT
- Domestic controversies
- Chicago
- Propose and approval for the creation of NAC in APBMT
The Committee of Measures for Fukushima Nuclear Power Accidents in JSHCT (1)

1) Members
   a) All the members of the current Board of Directors,
      JSHCT, 23 members
      Contact Person: Society President
   b) Special Advisers: 4 transplant physicians and one nurse who were the team members of JCO nuclear accident in 1999
   c) JSHCT Secretariat
   d) JSHCT Data Center
The Committee of Measures for Fukushima Nuclear Power Accidents in JSHCT (2)

2) Missions:
   a) Information sharing
   b) Collaboration with domestic (National government, JMDP, JCBBN etc) and international organization (APBMT, EBMT, ASBMT/CIBMTR, WMDA, WBMT etc)
   c) Nation-wide quick survey to confirm the abilities of HSCT/HSCH
   d) To make algorithm of HSCT performance for radiation victims
   e) Other things related to this subject

3) Terms of the committee: Till this subject is solved
The statement from Japan Society for Hematopoietic Cell Transplantation (JSHCT) on recent earthquake disaster and subsequent nuclear power plant accident in Japan.

Japan Society for Hematopoietic Cell Transplantation (JSHCT)

The Japan Society for Hematopoietic Cell Transplantation (JSHCT) would like to express our deepest sympathy for all the losses and peoples still enduring this very difficult time. The JSHCT will work together by all means to overcome this devastation and hereby declare that we will offer the following supports.

1. As of March 24, 2011, one hundred and sixty eight transplant teams participating in the JSHCT are ready to accept patients for whom the allogeneic stem cell transplantations had been scheduled but were postponed or cancelled because of the disaster (173 teams are also available for those who are in need of autologous stem cell transplantation).

2. In addition, ninety one transplant teams are standing by to treat victims of radiation exposure from the nuclear power plant accident.

3. Also, 107 transplant teams are standing by to collect and store their own hematopoietic stem cells from the peripheral blood for workers who are striving to restrain the radiation. However, this procedure must not be considered as securing the work in high radiation exposure and JSHCT re-emphasize the protecting them from high radiation exposure remains essential.

4. The above mentioned supports from JSHCT are not applied for the general public at this moment.

The JSHCT requests the authorities related to the operation of nuclear power plant in Fukushima to disclose more detailed data and information that helps us to plan and prepare more precise setup to treat possible nuclear accident victims.

Finally, the JSHCT would like to express our sincere appreciation for generous offers from CIBMTR/ASBMT, APBMT, EBMT, NMDP, WBMT, and many other organizations of the world in case of our medical resources are overwhelmed.
The second statement from Japan Society for Hematopoietic Cell Transplantation (JSHCT) on recent earthquake disaster and subsequent nuclear power plant accident in Japan.

The JSHCT express our deepest condolence and sympathy again for all the losses and peoples still enduring this very difficult time, and we also show our sincere deference to those who are working so hard to rescue and restore the affected areas. The JSHCT has been taking necessary actions to support the patients or victims in disabled areas according to the plans listed on our previous statement. Since that time, the situation of disabled area including Fukushima nuclear power plant has kept changing, but it remains to be unsettled. Taking those changes into considerations, the JSHCT hereby summarize our views of settlement and supports for those who are still suffering from the sequela of the recent disaster.

The JSHCT will continue to work together closely with donor registries and related organizations in order to ensure that the patients in affected area, who in need for hematopoietic stem cell transplantation as standard of care, will receive the procedure without any delay. The JSHCT requests the authorities responsible for the operation of Fukushima nuclear power plant to take necessary steps to secure the safety of nuclear workers. Those include medical check-up with the tests for estimating the dose of their radiation exposure according to the law and guidelines in order to avoid both acute and late radiation injury. In addition, the JSHCT again requests the authorities to disclose detailed data and information on the workers working at the site and to establish the work project and working hours to secure protect them from high-dose radiation exposure accordingly.

The radiation level of inside of Fukushima nuclear power plant remains high, and it is expected to take a long time to recover the disabled nuclear plant. Under those circumstances, together with the fact that the precise and detailed information on the radiation dose and the health status of nuclear workers have not been disclosed properly on timely fashion, the JSHCT considered that the risk of accidental radiation exposure will accumulate for the nuclear workers. Therefore, the JSHCT continue to collaborate with transplant centers where the peripheral blood hematopoietic stem cell (PBSC) harvest and collection is available. Currently, 107 transplant teams are standing by to collect and store their own stem cells for nuclear workers who are at a risk of accidental high-dose radiation exposure through their works at the sites of accident.

However, autologous PBSC transplantation is not a perfect strategy to treat radiation victims as the procedure rescues only the hematopoietic capacity but no other tissues. The JSHCT concerns that having a safety net of stored cells could encourage unnecessarily dangerous behavior among the workers, increasing the risk of health problems, thus we would like to reemphasize that all the measures for protecting the nuclear workers from high-dose radiation should be a matter of highest priority.

The JSHCT will continue to work together with ninety five transplant teams and donor/stem cell banks, and is standing by in order to perform every hematopoietic stem cell transplantation in timely fashion if unfortunately the accidental high-dose radiation exposure occurs. The systems and networks supporting hematopoietic stem cell transplantation have almost completely restored and become capable to deal with massive radiation victims. The JSHCT now considers the situation where our medical resources are overwhelmed for handling massive accidental radiation victims becomes unlikely. The JSHCT would like to express again our sincere appreciation to many oversea academic organizations and stem cell banks for kindly offering their resources at the beginning of the disaster.
Summary (1)

1. Despite of the difficulties by mega-earthquake on March 11, 2011, JMDP kept its activity without postponing the on-going coordination.

2. JMDP and JCBBN cooperated and facilitated unrelated hematopoietic stem cells to all the planed recipients. As the results, numbers of UR-HSCT did not show significant decrease in that month and the annual case numbers rather showed slight increase from one year before.
Summary (2)

3. The nuclear accident by the earthquake rose questions about the relationship between radiation injury and hematopoietic stem cell transplantation. JSHCT has implemented several projects such as joining international conferences and organizing domestic symposiums to get the answers for this issue.
E-mails of inquiry from WBMT (APBMT, WMDA etc) in March 2011

Paula Watry, Mary Horowitz, Effie Petersdorf, Jeff Szer,
David Ma, Dietger Niederwieser, Alejandro Madrigal,
Jon van Rood, Jane Apperley, Christian Chabannon,
Marry Evelyne, Mickey Koh, Marcel Pasquini, Kathy Loper,
Eliane Gluckman, Dennis Confer, Gerhard Ehninger, Donna Regan,
Carlheinz Muller, Chirayu Auewarakul, Tahir Shamsi,
Lin Kai-Hsin, Herman Hariman, Saengsuree Jootar,
Raymond Liang, Tapan Saikia, Hong Junling, Po-Min Chen,
Didi Jasmin, Anthony Dodds, Jong Wook Lee, Albert Lie,
Tzeon-Jye Chiou, Pauline Dodi, He Huang, Philip Rowlings,
Tran Van Binh, Ouyang Jian, Jih-Luh Tang, Elizabeth Moore,
Robert Gale, Ray Powles, Bhawna Sirohi
E-mails of inquiry from Blood and Marrow Donor Bank System in the abroad in March 2011

- KMDP • NMDP • Taiwan • Hong Kong
- Norway • France • Brazil
- Germany • Austria • Anthony Nolan
- Thailand • CMDP • Canada
- Belgium • Singapore • South Africa
- Switzerland, Slovenia, Sunshine China
- WMDA
Acknowledgement

- JMDP, JCBBN and JSHCT express our sincere thanks for these kind and warm regards from our friends whole through the world.

- Your immediate responses encouraged us so much and released us from the feeling of isolation on those days.