Medical Relief Activities in the Great East Japan Earthquake: DMAT & JMAT teams

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In response to the Great Hanshin-Awaji Earthquake of 1995, the Akita Disaster Medical Relief Plan was established in 1996. At that time, it was decided to dispatch disaster coordinators from the Akita Medical Association in the event of a disaster. The Akita Prefectural Government and the Akita Medical Association also signed an agreement pertaining to disaster medical relief activities. However, this agreement was limited to disasters that occurred only in the prefecture.

In 2008, the Disaster Medical Assistance Team (DMAT) was added to the Akita Regional Disaster Prevention Plan for the first time. In 2009, guidelines on the establishment and management of the DMAT were formulated, and in 2010, the number of DMAT teams increased, leading to the signing of agreements between the Akita Prefectural Government and DMAT hospitals in the prefecture. It was at this point that the Great East Japan Earthquake occurred in 2011. In response to this event, the Relief Plan was partially revised in March 2012.

At present, there are 17 DMAT teams at DMAT hospitals in Akita Prefecture. Akita Prefecture is very long in the north-south direction. With the addition of a DMAT hospital in the city of Odate in the north this year, DMAT teams have now been positioned in all areas of the prefecture.

To cope with the aftermath of the Great East Japan Earthquake, a medical headquarters for disaster control was set up immediately after the disaster as an organization under the Disaster Response Headquarters. Akita DMAT teams were dispatched to Iwate and Miyagi Prefectures. The areas where we operated were the cities of Kamaishi, Ofunato, and Miyako as well as a fire-fighting school, Hanamaki Airport, and Sendai Medical Center. In Akita Prefecture, we set up a DMAT coordination headquarters and coordinators were dispatched there from the Akita Medical Association.

The main activities of Akita DMAT were hospital support in Kamaishi, Ofunato, and Miyako and cooperation with intra-regional transport via ambulance and helicopter. We set up a staging care unit (SCU) at the Japan Air Self-Defense Force (JASDF) Air Rescue Wing's base at Akita Airport, creating an extra-regional base for wide-area transport.

Actual wide-area transport was conducted on March 14 and 15 with six patients transported from Hanamaki Airport to Akita Airport, one each being admitted to six hospitals in Akita City. Naturally, these transports were conducted in close cooperation with the JASDF and the Fire Department.

Shown in **Fig. 1** is the situation of the Akita Disaster Response Headquarters on March 11. The time 16:08 is observed on the lower of the two pictures. So, in a little over an hour from the occurrence of the earthquake just before 15:00, Akita Prefecture had launched a Headquarters of this size, with the presence of the governor as

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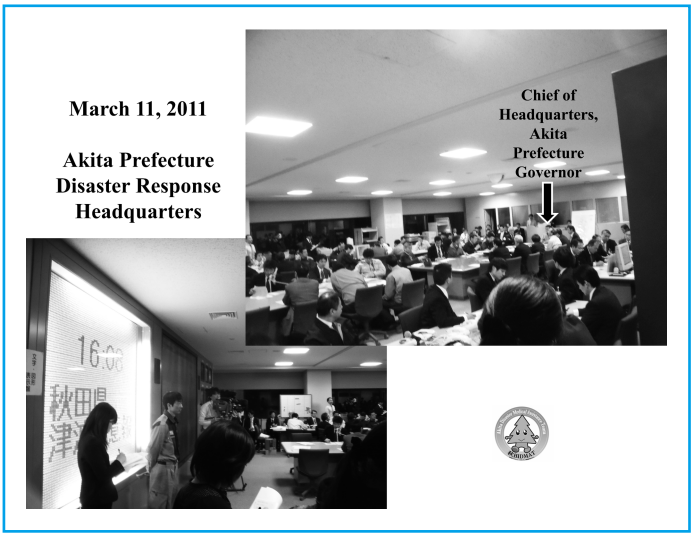

Fig. 1

its chief.

On March 14, three days after the disaster, we started to consider dispatching post-DMAT medical teams. We began interacting with Iwate Prefecture's Promotion Section, but things were quite confused in Iwate. Even the chain of command was in disarray, making it difficult to coordinate things. Therefore, we looked for a way of handing over health management of the afflicted people in shelters.

DMAT activities, which are usually responsible for about two days, were extended to a degree, but it was decided to withdraw Akita DMAT on the 16th. The prefectural DMAT coordination headquarters made the dispatch requests to directors of DMAT hospitals and later to designated assembly hospitals, and also conveyed information from the Iwate coordination headquarters. Since this was a time of emergency, roads were blocked, the Tohoku Expressway was closed to all except emergency vehicles, and there was a long waiting line of cars at gas stations that had a desperate gas shortage. Under these circumstances, several gas stations gave priority to relief teams and this information was conveyed to DMAT teams. The above were the activities of the headquarters.

On March 16, in response to the request of the Iwate Prefectural Government for relief operations, we organized Akita Prefecture medical relief teams. This was done based on an agreement signed between Akita Prefecture and the Akita Medical Association in 1996. On the same day, the Akita Medical Association received a request from the Japan Medical Association (JMA) to mobilize the Japan Medical Association Team (JMAT), and so we ended up receiving two requests. In the midst of an extraordinary snowstorm, we were waiting for instructions from Iwate Prefecture, but the situation in the affected areas was chaotic and so we were told it would be a little difficult to receive instructions soon.

On March 18, we organized two teams consisting mainly of DMAT members. They went to seek information on the situation in Kamaishi, undertook medical efforts in the town of Otsuchi and its shelters, and reported back. Later, we received an official request for medical assistance in Kamaishi and so continued to dispatch JMAT Akita teams organized at the hospital level, generally for four-day/three-night tours. The teams made the rounds of the shelters under the direction of Kamaishi Disaster Response Headquarters. From March 18 onward, I think that JMAT Akita teams were going around three to four shelters. Personally, I only went around two shelters. The Akita Medical Association, presuming long-term medical activities, established a forward base at a Japanese-style inn in the city of Tono for dispatched members to rest and to store medical and other supplies.

For about 10 days from March 20, there were

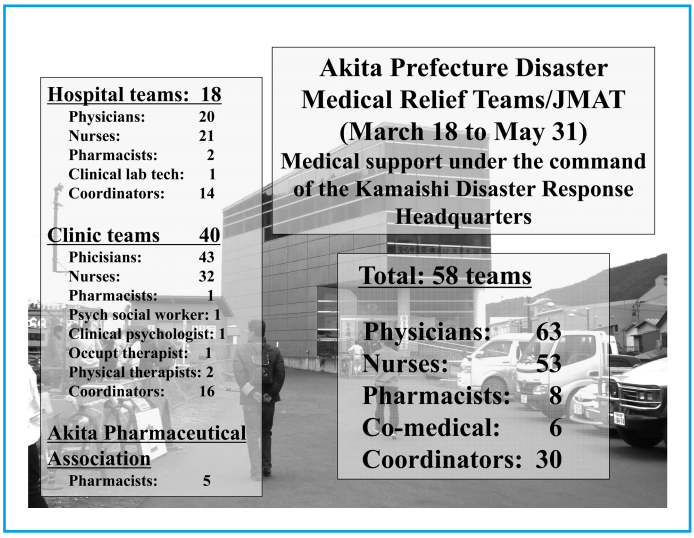

Fig. 2

a few requests to accept sick and injured patients via helicopter transport. These patients were transported from two hospitals in Ishinomaki to disaster base hospitals in Akita Prefecture.

Entering April, JMAT Akita was quite concerned in the disaster medical response headquarters about whether they were hindering local health care provided under health insurance from restoration and independence, since they had experienced the problem of residents' dependency on medical teams when they had stayed for a long time during the 1995 disaster. After holding frequent discussions with the local Medical Association, medical activities were continued based on the judgment that there was no problem. On April 12, a first-aid station was opened in the gymnasium at the Kamaishi Civic Center and started providing first-aid medical services.

This Civic Center is much closer to the ocean than the Disaster Response Headquarters, in a location almost reached by the tsunami where water service was not restored until May 22. The adjacent shelter was included in the scope of medical service coverage. However, by this time, nearly everyone was gradually calming down. Whereas team members stayed overnight for the first three days, since there was no need for nighttime service, the members switched to going to work on a daily basis from the forward base to provide medical support at the shelter and make the rounds in the vicinity. At the same time, the Akita Pharmaceutical Association had also dispatched pharmacists who managed drugs for us.

Entering May, JMAT teams organized at the clinic level, rather than the hospital level, were dispatched in rotation and provided first-aid services and undertook the medical rounds at shelters. Nurses living in Kamaishi also participated as volunteers.

This is the breakdown of disaster medical relief teams from Akita—in other words, JMAT Akita (**Fig. 2**). There were a total of 58 teams, and as you can see in this breakdown, many health professionals including physicians, nurses, co-medical staff, and others participated. President Oyamada and Executive Board Member Suzuki of the Akita Medical Association and Chief of Headquarters Terada of the Kamaishi Medical Association played extremely active roles in the Iwate Disaster Response Headquarters and effectively operated some of the health care in the disaster-stricken areas. Discussions on the details and timing of support were repeatedly held among the persons involved, including the Kamaishi Disaster Response Headquarters, the chief of the Kamaishi Medical Association's disaster medical response headquarters, the Akita disaster medical response headquarters, and the Akita Medical Association. In these discussions, it was mutually confirmed that medical needs had decreased and that health care provided under

health insurance had recovered, so it was decided to withdraw JMAT Akita at the end of May.

A lesson learned from these dispatches is that disaster medicine is not provided independently by DMAT and JMAT teams; rather, there are various phases. Health care in the chronic phase is really provided over a long time period and so medical teams are required to have the flexibility to handle needs that change moment by moment.

I also thought that while teams are dispatched by many different organizations, the organization that strongly ties them together has to be really dependable. Since disaster medical care is not carried out by medical teams alone, I felt, cooperation with other organizations—fire departments, police, Japan Self Defense Forces, and Japan Coast Guard—is extremely important.

We were given satellite phones prepared by the local government to use in the affected areas, but it was very difficult to get a good connection. Whenever we wanted to make a report, the connection was lost. In the future, I think that if we can use communication tools to be developed by the Japan Aerospace Exploration Agency (JAXA), connections will become more stable.

I believe that we have to implement various realistic drills—not just desktop drills—and make use of experience gained from this major disaster. I also felt that preparation that applies these kinds of reflections and lessons cannot be conducted unless it is done on a regular basis. Accordingly, we formed a coordination team in Akita with Executive Board Member Dr. Suzuki as the head coordinator and with us as coordinators beneath him. Having this experience, I thought that it is important to train and appropriately position human resources who can act as leaders and coordinators during a disaster.