

SPECIAL COMMUNICATIONS

TRANSFUSION SUPPORT IN MASS DISASTER BY ARMED FORCES INSTITUTE OF TRANSFUSION (AFIT)

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INTRODUCTION

Mass disaster is an unexpected event which results in wide spread damage to property, injuries & death; like air crash, train derailment & earthquake etc. As these causalities occur in a very short span of time therefore they outnumber, in severity and diversity, the medical resources to deliver comprehensive & definitive medical care to all victims. These events are “never typical”, but people who are involved in an aftermath are “always typical”. To manage these causalities paradigm is change from “application of unlimited resources for the greatest good of individual patient” to “allocation of limited resources for the greatest good of the greatest number”. The injuries in earthquake are mostly due to trauma, asphyxia, dust inhalation and exposure to extreme environment resulting in hypothermia. Therefore the injuries in such cases are broadly grouped into majority (minor cuts, bruises), small group (fractures) and minority (multiple fractures, internal injuries and crush syndrome). For adequate response of blood transfusion support, it is essential to have this background knowledge beside knowing the dynamics of flow of causalities.

The Immediate Responses of AFIT During 8th October Earthquake were:

- Activation of SOPs to avoid reflex responses.
- Assessment of need of blood & present stock

- Mobilization of donors and blood donation
- Listing of potential sure blood donors.
- Establishment of field blood camp as part of 10 Corps Field Relief Activities
- Evaluation of medical supplies and their replenishment
- Provision of blood and blood components to other hospital of the area
- When to go for appeal to community for blood donation through media.

Blood Donation and Collection of Blood:

It is an “under believed” fact that in case of disaster there will be no shortage of blood donors. The public response is always overwhelming due to media publicity. In fact the response might be so huge that it can actually suffocate the transfusion services. The need is therefore to organize the blood donation in a very sympathetic, coordinated, but off course according to requirement basis. Three teams worked round the clock in shifts. The duties of these teams were.

- To ensure smooth registration of donors, blood donation and care after blood donation.
- To counsel the surplus donors and prepare the waiting list of these donors.
- To ensure that telephone links are properly functioning.

- To assess any need of urgent requirement of rare blood groups and

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e with ISPR/TV/Radio.

The Available Blood:

- The available blood: This institute had more than 1500 units of RCC on the morning of 8th October time and over 2000 units of fresh frozen plasma.
- The donor pool: The readily available donor pool was the cadets of Army Medical College, EME and Signal College. Beside, the local inhabitants of Rwp/Islamabad showed very enthusiastic response.
- The Camps: Field blood donation camp was organized at Race Course Rwp ground as a part of HQ 10 Corps relief activities. Beside this, camp was also organized at Okara Garrison.

About six thousand units (5884) of blood were collected by AFIT in about seven days after the earthquake. Beside this, about 1500 healthy donors were registered for blood donation. All the blood donations of AFIT were taken in triple blood bags. This is though against the traditional recommendation but resulted in huge reserve of fresh frozen plasma, which in fact was required for these patients later on.

Screening:

It is worth mentioning that same standard and method of screening of blood for infectious agents was maintained as was done in peace time and no relaxation was given in this regard. All the blood units were screened the same day and were ready for issue very next day.

Issue of Blood:

The issue of blood had certain difficulties in these situations but these were overcome by the hard work & dedication of even the

junior most staff of this institute. In initial days, there were many patients without any identity. These cases were issued blood in a "personalized manner" i.e. the person who took blood sample, was also involved at the time of transfusion. This approach helped a lot to avoid any clerical error in blood transfusion. The issue policy adopted was as follows:

- The blood which was already held by this institute was issued.
- All cold surgeries at service hosp were cancelled
- Only group to group blood after necessary cross-match was issued
- Very rarely O positive RCC for males and O negative blood for females were issued without cross-match

A total of 3532 units of RCC, 313 FFP, 52 units of platelets and 15 units of cryoprecipitate were issued to 1687 patients. The distribution of these patients consists of 980 male, 615 female and 92 children. In this respect it is worth mentioning that none of the surgery was postponed or delayed because of the lack of blood or blood components. Moreover, not a single mismatch transfusion reaction was reported in this period. Beside providing transfusion service to the patients in svc hospitals, requirement of civil hospitals of the region were also met. A total of 2382 blood units were issued to these hospitals.

Supply of Reagents/Med Store Items:

The supply of all the reagents required in blood transfusion were ensured and there was no shortage of these medical store items. This included the supply of blood bags, blood screening kits, ABO anti sera etc. In this respect the response of different firms matched the response of other Pakistani people during the earthquake. We received many donations of medical store items from different NGOs.

The Storage:

This is the area which showed a weak link in most blood banks even in the major cities. Many regional centres contacted AFIT to store the collected blood. AFIT stored blood sent from Karachi, Quetta, Mirpur, etc. About two thousands (1807) unit of RCC were sent by these blood banks for storage at AFIT. The two cold rooms of AFIT have the storage capacity of over 5000 units of blood. Beside this there are ten blood banks with total storage capacity of around 2500 units of RCC.

Transportation of Blood:

The blood transportation was the area which needs further improvement. Although the needs were met with the help of private sector, but there is lot more to be done on this aspect in government sector. The blood transportation was required to move the blood donated at Karachi, Quetta & Okara etc. Similarly the blood was required is earthquake hit area of Muzaffarabad, Bagh, & Balakot. The modes of transportation used were helicopters and by road. Although this institute had field transport blood banks (capacity 50 units of RCC), but refrigerated vans were used to transport blood and blood products from AFIT to earthquake hit areas.

CONCLUSION AND RECOMMENDATIONS

Every crisis has a lesson and provides an opportunity to revise and strengthen the existing SOPs for better performance. Following recommendations are based on the experiences out of this disaster.

- There is need to establish national blood commission or council within the frame work of national emergency plan. This should closely monitor and advice all the national blood banks

about the requirement of blood vis-à-vis the quantum of emergencies requiring blood transfusion. Moverover, it should update the blood banks about the storage facilities at different places to avoid suffocation effects on blood banks.

Table-1: The blood issued to different hospitals.

Name of Hosp/Institute	Qty
Thalassaemia Centre Liaqat Road Rawalpindi	671
Fauji Foundation Hospital Rawalpindi	461
Abbas Institute of Medical Sciences Muzaffarabad	265
Balakot Fd Hospital	200
Pakistan Institute of Medical Sciences Islamabad	52
DHQ Hospital Azad Kashmir	200
Cantt General Hospital Rawalpindi	104
CMH Rawalakot	80
CMH Abbottabad	55
CMH Muzaffarabad	95
CMH Jhelum	155
CMH Mangla	45
Total	2383

- There is need to designate one blood bank as national ref blood bank.
- Optimize the communication system of blood banks with ref center so that planned blood collection is done in accordance with the need.
- Each blood bank should have an updated and pragmatic SOPs and these should be rehearsed every now and then for their effectiveness.
- The refrigerated mobile vans should be provided to all the main regions, especially at Rawalpindi / Islamabad, Lahore, Peshawar, Quetta, Bhawalpur / Multan and Karachi.