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Quality Assurance in Immunohaematology for Bhutan, India and Maldives

Report of a Sub-regional Training Course

Mumbai, India, 23- 27 September 2002

WHO Project No: ICP BCT 001

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1. INTRODUCTION

WHO has identified blood safety as one of the priority areas. The theme of World Health Day 2000 was "Safe blood starts with me". Concerted efforts have been initiated by WHO to assure blood safety, especially in developing countries where not only the availability of blood is inadequate, but its quality is also considered uncertain. Immunohaematology refers to the most basic technique in blood banking viz identification of the blood group and determination of cross matching between blood of the donor and the recipient. Inconsistency in this technique can be fatal. Even in the modern era, in developing countries, large number of fatalities consequent to blood transfusion are due to administration of mismatched blood.

Review of immunohaematological techniques in various blood banks in the SEA Region has revealed these to be performed either by outdated methods or without any internal quality controls. Inadequacy in skills of many blood bank professionals in applying a uniform technique for immunohaematology with internal quality controls has been identified as one of the major shortcomings. Improvements in the skills of blood bank staff can contribute significantly to WHO's objective of ensuring safe and quality blood.

To ensure overall quality in any blood transfusion service, an intercountry hands-on training course was organized at the Institute of Immunohaematology, Indian Council of Medical Research, Mumbai, from 23 to 27 September 2002. The workshop was attended by 11 participants from India and Maldives. The list of the participants can be seen at Annex 1 and the programme of work at Annex 2.

2. OBJECTIVES

The objectives of the training course were as follows:

(1) To train participants in the correct use of immunohaematology techniques in blood banking;

(2) To impart skills in implementing internal quality controls in immuno-haematology;

(3) To orient the participants in general hygiene and biosafety measures in blood banks, and

(4) To acquaint participants with the principles and mechanism of external quality assessment scheme.

3. INAUGURAL SESSION

The training course was inaugurated by Professor NK Ganguly, Director-General, Indian Council of Medical Research (ICMR). Welcoming the participants, he emphasized the importance of quality in immunohaematological techniques, and assured all technical support from the Institute of Immunohaematology (IIH) to the participants even after the training course was over. Prof Deepika Mohanty enunciated the objectives of the training course and expressed her gratitude to WHO for selecting IIH for the conduct of this training course.

4. TRAINING COURSE

The main aim of the training course was to provide hands-on training to the participants in updated standard immunohaematology techniques. These included various internal quality control measures, biosafety activities and acquaintance with external quality assessment schemes (EQAS). After brief presentations, extensive practical sessions including performance of blood grouping, titration of antibodies, crossmatching techniques, quality control of blood group reagents, identification of atypical antibodies and investigation of haemolytic disease of the newborns were undertaken by the participants. A demonstration of ELISA technique for screening for transfusion transmissible infections was also conducted. The importance of performing antibody screening tests as a routine procedure as well as various other techniques used in the laboratory were emphasized.

Every practical activity was followed by an interactive session between the faculty and the trainees in which the problems related to the practicals were solved. Participants were also asked to solve some of the problems that might come up in their daily laboratory tasks.

A handbook on immunohaematology was also brought out during this training course and provided to all the participants. This included the lectures delivered and the techniques performed in the laboratory during this period.

5. VALEDICTORY SESSION

The valedictory session and certificate presentation ceremony were chaired by Dr Sudarshan Kumari, Regional Adviser, Blood Safety and Clinical Technology, WHO South-East Asia Regional Office, New Delhi. She briefed the participants about WHO Safe Blood Strategy and various activities that the Regional Office was undertaking. The participants were also assured of post-training support through IIH, Mumbai as well as the National Blood Centre, Bangkok, Thailand.

6. RECOMMENDATIONS

6.1 To Member Countries

(1) The knowledge and experience gained from the training course in improving the quality of immunohaematological techniques should be utilized in providing safe blood.

(2) All laboratories should participate in some external quality assessment scheme (EQAS) for regular independent assessment of quality of blood group serology.

(3) IIH, Mumbai, India and the National Blood Centre, Bangkok, Thailand may be approached for any technical support and trouble shooting in quality assurance of immunohaematology.

6.2 To WHO

Technical support should be continued to all Member Countries in developing and implementing quality system in blood transfusion services.

Annex 1

LIST OF PARTICIPANTS

India

Dr DJ Baruah
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Dr UM Sharma
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Bhopal,
Madhya Pradesh

Dr Debashish Mishra
Blood Bank Officer, Red Cross Blood Bank
Capital Hospital
Bhubaneshwar, Orissa

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Kerala

Dr Alok Kumar.
CMO and Blood Bank Incharge
LNJP Hospital,
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Dr KN Pande,
CMO and Blood Bank Incharge
Deen Dayal Upadhyay Hospital
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Dr MK Pathak,
Blood Bank Incharge
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Blood Bank Officer
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Annex 2

PROGRAMME OF WORK

23 September 2002

0900 - 0930 hrs	Inauguration of the workshop	
0930 - 1100 hrs	**Lecture**: Human Blood Group systems with particular reference to blood groups of clinical importance	Dr K Vasantha
1100 - 1600 hrs	**Practical**: Procedure for ABO and Rh blood group detection and titration of ABO & Rh antibodies	Ms S Kulkarni & Ms S Jadhav
1600 - 1700 hrs	Discussion on the practical work done	

24 September 2002

0900 - 1030 hrs	**Lecture**: Cross-matching and its relevance in blood transfusion service	Dr K Vasantha
1100 - 1600 hrs	**Practical**: Techniques for Cross-matching	Dr K Vasantha & Ms S Jadhav
1600 - 1700 hrs	Discussion on the practical work done	

25 September 2002

0900 - 1000 hrs	**Lecture**: Biosafety measures in transfusion medicine	Ms S Chipkar
1000 - 1330 hrs	**Demonstration** of ELISA technique for HIV, HBsAg, HCV and visit to different laboratories for seeing biosafety measures	Ms S Chipkar & M Patwardhan
1400 - 1630 hrs	**Practical**: Problems encountered during grouping and cross-matching	Dr K Vasantha Ms S Jadhav
1630 - 1730 hrs	Discussion on the practical work	

26 September 2002

0900 – 1000 hrs	**Lecture**: Quality control in blood group serology	Dr K Vasantha
1000 – 1100 hrs	**Lecture**: FDA rules and regulations	Dr D Mohanty
1130 – 1730 hrs	**Practicals**:	Dr K Vasantha
	1. QC of blood group reagents	Ms S Jadhav
	2. Investigation of haemolytic disease of the newborn	Ms S Kulkarni & Ms S Jadhav

27 September 2002

0900 - 1100 hrs	**Lecture**: Resolving problems related to grouping and cross - matching	Dr D Mohanty
1130 - 1630 hrs	**Practical**: Identification of atypical antibody with panel of red cells	Dr K Vasantha Ms S Jadhav
1630 - 1730 hrs	Interactive session	