

BLOOD PROGRAMMING DIVISION

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| Deputy Director & Head | ... Dr. Zin Zin Thu MBBS(UM1), MMedSc(Pathology) (UM1), PhD(Pathology)(UM1) |
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Blood programming division is mainly involved in research projects on transfusion medicine, concerned with the immunohaematology and appropriate transfusion of blood and blood component. Regarding the blood safety, surveillance of transfusion transmitted infections not only in blood donors, but also in transfused patients has been studied.

RESEARCH PROJECTS

1. HEALTH SYSTEMS RESEARCH

1.1. Quality Health Care

1.1.1 Blood and blood components ordering and utilization in Yangon General Hospital, Yangon Children hospital, Central Women Hospital, Yangon, Myanmar

Over-ordering of blood is very common and leads to holding up of the blood bank reserve, ageing of the blood units and wastage of blood bank resources. This study made assessment on ordering and utilization of blood in Yangon General Hospital, Yangon Children Hospital and Central Women Hospital in Yangon, Myanmar. The study was approved by the Ethics Review Committee of the Department of Medical Research, Ministry of Health and Sports, Myanmar. At Central Women's Hospital, a total of 1542 units of blood and blood component requesting for 721 patients admitting at the 5 different wards were included in this study. The actual usage of blood units per requested units in each wards were (24/ 335) 7.16% in Obstetrics ward, (190/ 431) 44.08% in Miscarriage patients ward, (43/ 210) 20.47% in Gynaecological diseases ward, (70/ 142) 49.29% in Oncology ward and (35/ 424) 8.25% in Emergency ward, respectively. We found that less than 10% of ordered blood units were actually used in Obstetrics ward and Emergency ward. Blood and blood component requesting forms of 1995 patients from the different wards of Yangon General Hospital were also included in this study. A total of 6142 units of blood and blood component were requested for 1995 patients. The actually usage of blood units per requested units in each wards were 1337/1377 (97%) in Medical wards, 1632/2318 (70%) in Surgical wards, 707/717 (98%) in Oncology wards, 207/543 (38%) in Orthopedic wards, 278/353 (78%) in Neurology wards, 159/260 (61%) in Specialties' wards, respectively. We found that more than 60% of ordered blood units were actually used in all wards of Yangon General Hospital except Orthopedic wards. From the different wards of Yangon Children Hospital, 3234 units of blood and blood component were requested for 1003 patients. The actual usage of blood units per requested units in each ward were 540/619 (87.2%) in Medical wards (M1, M2), 424/591 (71.7%) in Surgical wards (S1, S2), 1099/1117 (98.3%) in Haemato-oncology unit, 356/362

(98.3%) in Day care unit, 148/163 (90.7%) in Intensive Care unit, 254/295 (86.1%) in Neonate unit, 62/91 (68.1%) in Specialties' wards (Orthopedic and Renal unit), respectively. This study found out the situation of blood ordering and utilization according to different specialty wards of Yangon General Hospital, Yangon Children Hospital and Central Women Hospital in Yangon, Myanmar. Over-ordering with minimal utilization squanders technical time, reagent and imposes extra expenses on patients. This study will be of great help for the update of transfusion guidelines.

1.1.2. HLA Class I and Class II alleles and haplotypes frequencies in Kayah, Chin, and Rakhine ethnics of Myanmar

HLA allele and haplotype frequencies vary among different populations and knowing the ethnic background of donors will be valuable for the selection of potential matched unrelated donors. This study is aimed to investigate the distribution of HLA Class I and Class II alleles and haplotype frequencies in Kayah, Chin and Rakhine ethnics of Myanmar. This was a cross-sectional descriptive study. Total study population was 158 healthy persons; 55 Kayahs, 55 Chins and 48 Rakhine. HLA typing was performed by PCR-SSOP-Luminex method. Our results included 8 alleles for HLA-A, 17 alleles for HLA-B, 12 alleles for HLA-C, and 14 alleles for HLA-DRB1 in Kayahs; 11 alleles for HLA-A, 22 alleles for HLA-B, 15 alleles for HLA-C, and 14 alleles for HLA-DRB1 in Chins; and 14 alleles for HLA-A, 27 alleles for HLA-B, 15 alleles for HLA-C, and 18 alleles for HLA-DRB1 in Rakhine. Haplotype A*11:01B*15:02 DRB1*12:02 had the largest frequency in Kayah, Chin and Rakhine with frequencies of 12.3% in Kayah, 17.9% in Chin and 5.2% in Rakhine. The information on the frequencies of HLA alleles and haplotypes in different ethnic population will be served as an important reference for donor registries, clinical and basic studies in immunogenetics and also provide information about the diversity of human populations.

SERVICES PROVIDED

A. ACADEMIC

| Sr. | Name | Course | Responsibility |
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| 1 | Dr. Zin Zin Thu | 1. M Med Sc (Pathology) 2. M Med Sc (Pathology) 3. M.Med.Tech (University of Medical Technology) | Teaching Thesis Examiner Teaching |

B. BLOOD MOBILE

In collaboration with National blood centre, total of six visits per year to Mingalar Byuhar religious association was carried out and collected 355 units of blood.