

Supply of rare blood in the Czech Republic

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Arbeitsgruppensitzung, Dessau, 23 November 2007



Rare blood in Transfusion Service

Two points of view:

- „transfusion scarcity“
 - HFA- negative donors
 - combined homozygosity (= negativity for multiple common antigens)
- „laboratory rarity“
 - as previous
 - and
 - LFA positive rbcs
 - Rbcs with variant and weak antigens



Rare donors in the Czech Republic

- National Rare Donor Registry (1)
 - in ÚHKT from 1963 (Dr.Kout) ... as one of first worldwide (reports about such registries from USA a England)
 - Accepted as National Registry by Ministry of Health in 1965
 - From beginning to 1974 in „paper form“
 - 1974 transfer to computer form /“hall size“ computer in Pilsen, later in Prague
 - But there was only one „central computer“ and local users – Regional Blood Banks were supplied by printed lists



Rare donors in the Czech Republic

- National Rare Donor Registry (2)
 - 1986 Regional Centres of Transfusion Service in the Czech Republic were equipped by Apple computers
 - Database of Rare Donors Registry was transferred to the Apple system and in cooperation with Mathematics Faculty of Charles University specialized software AKTER a ARCHTEX for donor search and inter-center communication were created
 - Communication between Centres in the Czech Republic was through regularly sent updated disquettes
 - Transfusion Service in Slovakia did not have Apple system, the communication was therefore still in paper form



Rare donors in the Czech Republic

- National Rare Donor Registry(3)
 - 90-ies: Apple system not longer perspective – need to transfer the Registry to IBM compatible platform
 - again in cooperation with computer staff of MF UK transformation to the dBase format
 - Later in 90-ies new communication system in decentralised Transfusion Service was created – telephone-line based network TransNet
 - New software „Registr“ prepared in ÚHKŤ – with two branches:
 - Rare Donors
 - Donors with positive infectious markers



Rare donors in the Czech Republic

- National Rare Donor Registry(4)
- Actual problems:
 - In rapidly developed computer and communication environment is current systém becoming obsolete
 - New hardware and software requirements
 - Communication will be through internet
- „Free market“ in information system services introduced new problem – Regional and Local Transfusion Centres are equipped with different software and „communication incompatibility“ must be solved



Rare donors in the Czech Republic

- Rare blood supply
 - the need of rare blood is evaluated in the National Blood Group Reference Laboratory in ÚHKT Prague
 - local centres with rare donors in their region are called to provide units
 - 2005 in the Central Military Hospital in Prague the Rare Blood Cryo-Program was started
 - „high-glycerol“ method is used and the Rare Blood CryoBank is now in the „filling“ period



Rare donors in the Czech Republic

- Current rare blood availability:
 - National Registry:
 - Contact through Ref.Lab.in UHKT [/pisacka@uhkt.cz/](mailto:pisacka@uhkt.cz)
 - Cca 5000 donors in the database with combined homozygosity for common antigens in all AB0 groups /predominantly in 0/ in population frequency 1% or less
 - Few HFA- /Co(a-), Yt(a-), Jr(a-), Vel-, k-, K(null), Fy(null)
 - CryoBank in the Central Military Hospital:
 - Contact through Ref.Lab.in UHKT [/pisacka@uhkt.cz/](mailto:pisacka@uhkt.cz)
 - Few HFA negative units
 - the rarest are 4 Co(a-b-) units imported from Canada
 - Group 0 combined homozygotes reserve is in just beginning



Rare blood for laboratory use

- All kinds of „rare“ samples
- Rare rbc phenotypes
- Rare antibodies

- Maintained in the National Reference Laboratory for Immunohaematology in ÚHKT
- Obtained also from patient samples tested in the laboratory
- International exchange of rare samples through SCARF cooperation



Rare blood for laboratory use

- Storage:
- rbc: cryokonservation in liquid nitrogen in glucose/saccharose suspension (frozen drops, easy to handle with small amounts/

- antibodies – frozen in -20°C freezer



Rare blood supply

- Often local/regional supply insufficient
- International cooperation necessary
- Many thanks to Dr. Wagner and Blutspendedienst in Springe and to all other colleagues and also rare donors involved in supply of 8 units of Co(a-) blood which I am bringing on my return to Prague and next week will be used for a complicated cardiosurgery in an anti-Co(a) alloimmunized patient in Brno.

