Incredible! I have not before seen such kindness in my life. Many thanks to you all. Dobčnik Rudi – Book of Impressions 2005

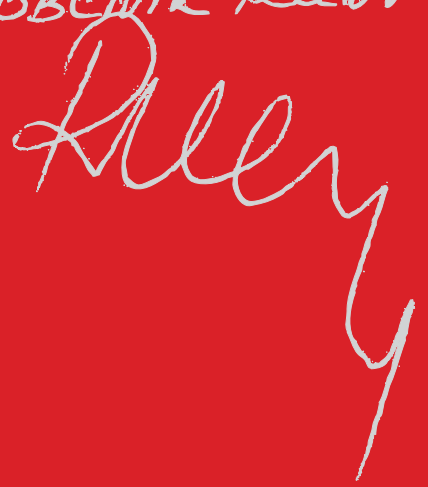
Blood Transfusion Centre of Slovenia

Informa-Echo.si

Nevenjetno ... take prijaznosti
v svojem življenju še nisem
doživel.

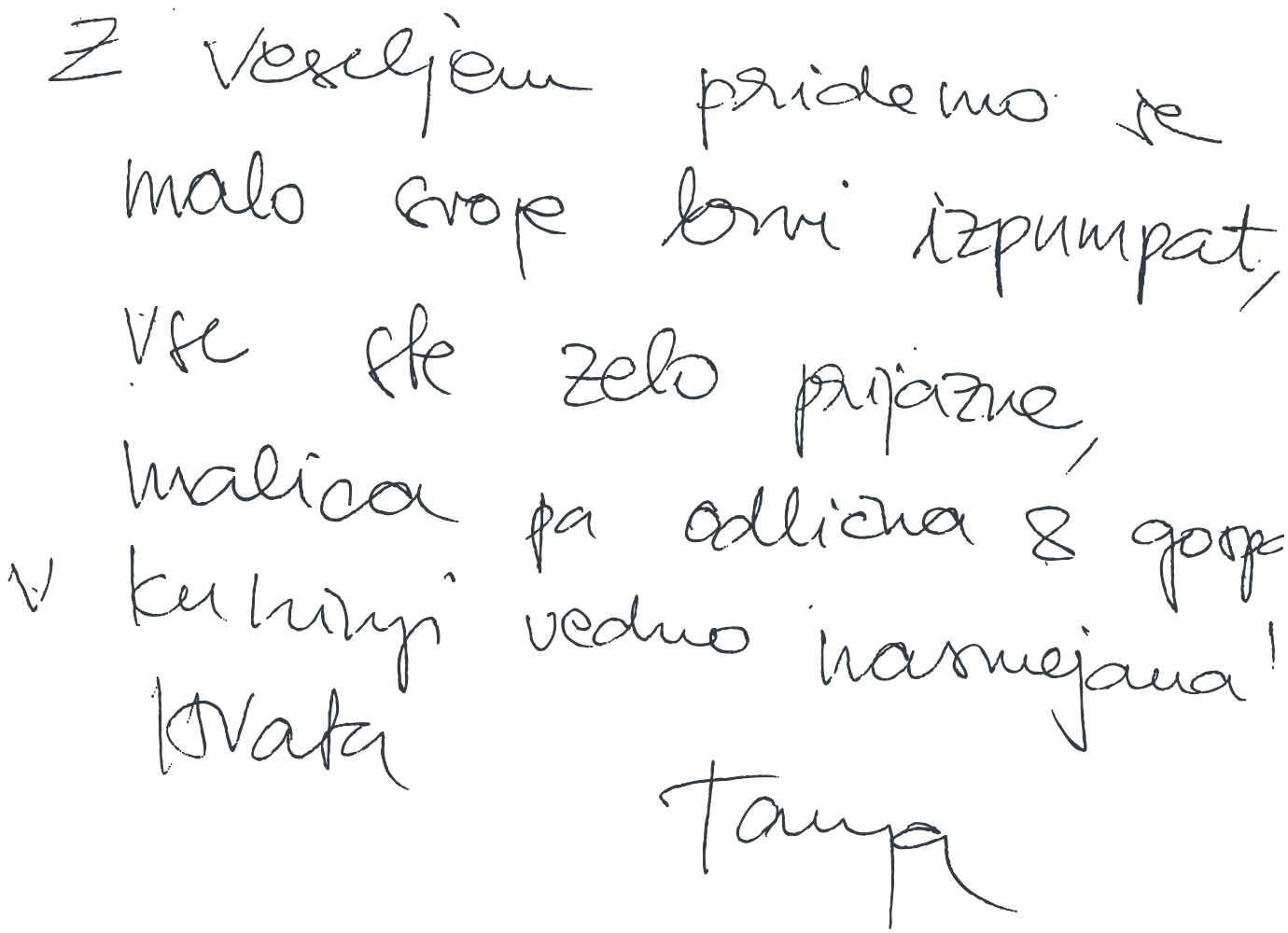
Najlepša hvala vsem

DOBRODOŠLI RUDI



Life flows

I'll be glad to come and offer my blood again, you are all very kind and the lunch is excellent. The lady in the kitchen is always smiling. Thanks.
Tanja – Book of Impressions 2005



Life Flows

2005 Annual Report of the Blood Transfusion Service in Slovenia

13 07. 2005 MATEJA ŠUBELJ

OSEBJE: „KAPO DOL“!

Hvala in nasvidenje čez 5

We have celebrated our 60th anniversary

On the occasion of the 60th anniversary of the first practice of transfusion medicine in Slovenia, which was celebrated in 2005, the first report on the work of the Blood Transfusion Service in Slovenia was issued. This report entitled “Life Flows“ presents an interweaving of the history of transfusion medicine in Slovenia with the activities and work performed in the year 2004. The English translation of the report was also sent to our colleagues abroad.

On the occasion of this anniversary, the Blood Transfusion Centre of Slovenia, in cooperation with the Slovene Red Cross and the Kvadrat agency, prepared an advertising strategy for recruitment and motivation of blood donors. The target groups included the population of young people between the ages of 20 and 25, businessmen and young mothers. Three video spots were prepared, along with a radio advertisement, printed materials, and the slogan “Today is a different day... I am donating blood.”

Photo: BTCS Archives

merci

Personnel: “Hats off!” Thanks, and see you in 3 months.
Mateja Šubelj – Book of Impressions 2005

Index

Gimnazija Vič je dala kri:
Nisem si mislila, da je kri tako temnordeča

The Vič Secondary School donated blood. I did not think that blood was so dark red. – Book of Impressions 2005

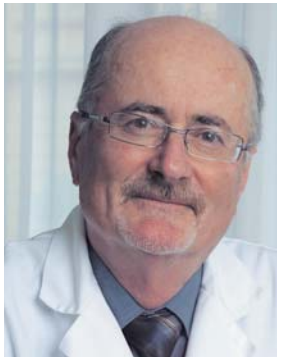


Photo: Tomaž Lunder

Life also flows in institutions

Life also flows in institutions. They have been created for specific purposes, therefore the reason for their existence is clear. But not all institutions are equally successful in the fulfillment of their mission, and their development does not always take place under ideal circumstances. In addition, they are not only dependent on maintaining a solid financial footing, but also on the diligence of their employees to perform their everyday duties at their workplace as well as possible, to their own satisfaction and for the benefit of the institution.

Success during the fulfillment of tasks is not only associated with the greater or smaller talents of individuals. It also involves the circumstances in which they live and the character that nature has bestowed upon them.

A successful institution is capable of equalizing all of these inevitable individual differences between its employees, through the diligence of individuals, which is contagious in well-organized environments, and collective achievements, which show whether the institution is keeping current with profession development or lagging behind. It is exactly through keeping up to date with their profession that successful institutions do not age, but maintain their full professional power from one year to the next. In this way, they can provide a working environment for generations to come.
Within a few decades, all of the faces within an institution may be replaced, but the institution itself remains the same, with the same tasks and expectations from society.

How did the Blood Transfusion Service in Slovenia carry out another year of its mission? Did the transfusion institutions which are part of the Blood Transfusion Service fulfill the expectations of Slovene society? Are they starting to show the long years they have spent in fulfilling their mission?

On the following pages we have given a detailed presentation of the work of the Blood Transfusion Services in Slovenia and its achievements in the past year. Naturally, these reports cannot be limited to a single year, as everything that takes place is related to both the past and future. Nevertheless, it can be said that the year 2005 was among the better ones. In the fulfillment of our basic mission, i.e. providing a safe and high-quality blood supply, we did not fail even once.

The year 2005 was also a year of significant international involvement, which is largely a consequence of our country's membership in the European Union. But that is a direction we need to follow, and Slovenia can be proud of the area of health care covered by the Blood Transfusion Service. We have proudly solidified and supplemented the quality system. We have taken care of the professional education and social security of all our employees, who are becoming an increasingly more valuable asset in modern times. But above all, decisive strides forward were made in 2005 to ensure transparent business operations and the adjustment of our business activities to numerous new regulations and laws. It often appeared that two concepts were battling in this process: the old one, based on ways of thinking and acting from past years, and a new one related to different people and different demands of the times.

A successful future is always associated with changes and with people who bring about new developments. In the year 2005 we stepped right into them decisively at all levels, and no signs of our ageing are visible as of yet. Let this be the case for the future as well!

Ljubljana, June 2006

Medical Director of the BTCS
Head Physician Irena Bricl, MD

BTCS Director
Dr. Božidar Voljč, MD

Blood Transfusion Service in Slovenia

Giving a part of one's own body to someone who urgently needs it is certainly one of the noblest forms of help to a fellow human being. The preparation and processing of donated blood components confers great social and also ethical responsibility.

Transfusion medicine makes it possible for sufficient amounts of high-quality and safe blood and blood products to be available for individuals who need medical help. It is active in all fields that, symbolically speaking, extend from the blood donor's vein to the vein of a blood recipient. This includes all activities that enable blood therapy – from blood collection, testing, processing, and storage, to all tests related to blood transfusion – all of which enables us to have safe blood available on time, whenever needed.

Blood is a medicinal product that enables doctors to treat patients and perform demanding surgical procedures, thereby preserving the health and life of patients.

A blood transfusion service has been organized for the performance of transfusion medicine activities in Slovenia. This consists of the Blood Transfusion Centre of Slovenia (hereinafter: BTCS), Department of Transfusiology and Immunohematology of the Maribor General Hospital, and transfusion departments (hereinafter: TD) operating at hospitals in Celje, Izola, Jesenice, Murska Sobota, Nova Gorica, Novo Mesto, Ptuj, Slovenj Gradec and Trbovlje.
All transfusion departments are in charge of blood collection. Processing of blood is done at the BTCS, the Department of Transfusiology and Immunohematology in Maribor, and TDs in Celje, Izola, Novo Mesto and Slovenj Gradec. Blood collected at the Nova Gorica, Trbovlje and Jesenice TDs is processed by the BTCS in Ljubljana, while the Department of Transfusiology and Immunohematology in Maribor processes blood for Murska Sobota in Ptuj TDs. Processed blood is returned back to the respective TDs in accordance with their needs and plans. The testing of blood is performed in Ljubljana and Maribor, and in the future blood will be processed only at these two sites.

Justifying trust

The provision of blood products that are as safe and effective as possible is the driving force of our activities. Therefore, a quality assurance system is being implemented in the field of transfusion medicine in order to ensure the best possible fulfillment of our basic mission.

Since the certification audit, two ISO 9001:2000 certificates have been granted to date: to the BTCS in December 2004 by the Slovenian Institute of Quality and Metrology, and to the Department of Transfusiology and Immunohematology in Maribor in September 2005 by the BVQI, an independent certification agency which is part of Bureau Veritas.

The BTCS acquired this certificate for activities involving the supply of blood, blood products and medicinal products derived from blood, as well as for the performance of immunohematologic tests, assays for infection markers, ensuring the safe transplantation of organs and tissues, production of diagnostic reagents, marketing of medicinal products derived from blood, and also for the development of these fields.

The Department of Transfusiology and Immunohematology in Maribor acquired this certificate for the areas of blood supply (collection and its processing, testing, storage and distribution) and clinical outpatient activities (virology, hemostasiology, immunohematology, outpatient clinic for the diagnosis and therapy of coagulopathies, outpatient clinic for autologous transfusions).

The acquisition of this certificate proves that these two institutions have achieved such a high level of organization and clarity of work that they fulfill all requirements of the ISO 9001:2000 standard. All employees have contributed to this end. Setting up this system and maintaining the quality of transfusion activities are priority tasks which are focused on the achievement of the highest standards in all transfusion departments.

ISO 9001
Q-685

Continual improvements

The Blood Transfusion Centre of Slovenia has undergone the first regular external audit of its management system, which was successfully completed in October 2005.

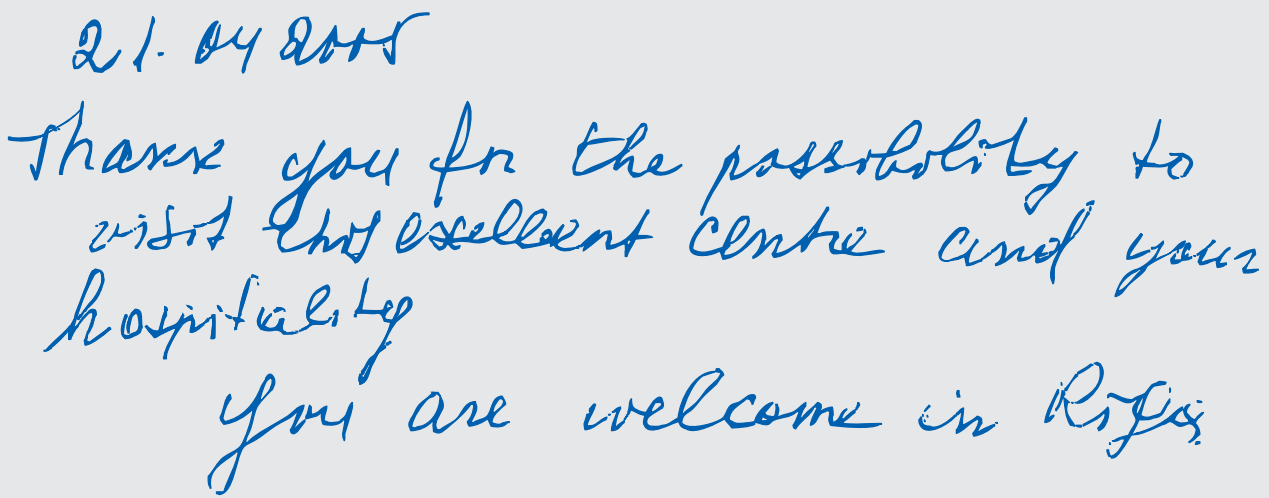
Since the essence of a management system lies in continual improvements, which are reflected in customer satisfaction and the satisfaction of other interested parties, including employees, the BTCS performed two surveys in 2005 entitled ”Measurement of blood donor satisfaction” and “Measurement of employee satisfaction”, which helped us analyze the current situation and adopt corrective measures.

Monitoring of our work

The use of any medicinal product is associated with a risk of adverse effects, and this is also the case with blood transfusions. Along with the numerous above-mentioned activities for the provision of high-quality and safe blood supply, the Blood Transfusion Service also runs a hemovigilance system to monitor the adverse effects of transfusions.
All information passed within the framework of hemovigilance improves the safety of transfusion therapy, and explains the risks of occurrence of adverse effects of transfusion therapy and how to reduce this risk by implementing additional measures.
An important goal of hemovigilance is to warn users and contractors that even if an incident has occurred, timely recognition of an adverse effect may prevent even greater damage.

Number and type of reported adverse reactions from blood transfusions in Slovenia in the year 2005

Hemolysis	5
Graft versus host disease	0
Transfusion related lung injury/Pulmonary oedema	0 / 3
Post-transfusion purpura	0
Allergy/Anaphylaxis	55 / 4
Non-hemolytic febrile reaction	66
Bacterial or viral infection	4
Other	12
Total	**149**



Thank you for the possibility to visit this excellent centre and for your hospitality. You are welcome in Riga – Book of Impressions 2005

Photo: Dnevnik

Our unit was very pleased with your services and personnel. We laughed so hard our muscles are still hurting. Special unit of border police M4 – Book of Impressions 2005

SPECIALNA ENOTA MEJNE POLICIJE M4!

ENOTA ZELO ZADOVOLNA S POSTREŽBO

IN OSEBJEM

SMEJALI SMO SEJDA

NA BOLJO MISICE

Ferdinand Borić

Mutual help

Safe blood is one of the most important natural resources of a country. In order to ensure safe blood for its citizens, every country needs a sufficient number of voluntary non-remunerated blood donors who regularly donate blood.

We may not be sufficiently aware that blood donors are the basis of a safe blood supply. This is one of the reasons why the European Union, in its Directive 2002/98/ES, has called upon its member states to strive for developing a higher social standing of blood donors, in accordance with the principles of voluntary non-remunerated blood donation.

In terms of the number of blood donors among its inhabitants and the number of units of collected blood, Slovenia is comparable to other European Union countries. The most important thing is, however, that we have as much blood as we need available.

Nowadays, people's responses to the question of why they are donating blood are remarkably similar throughout the world. Research has shown that the desire to help people and save lives are the two main reasons. The ethical motivation is very strong in blood donors. For these people, donating blood is a personal obligation which they are actually fulfilling. The sense of duty may originate from compassion as an emotional value or from the principle of mutuality, which entails mutual exchange between the donor of help and its recipient, as today's blood donor may tomorrow be the one to receive blood and vice versa. The norm of mutuality is considered a priority for the fair organization of society.

The main organizer of blood donation sessions in Slovenia is the Red Cross of Slovenia, which is performing this task with its network of 56 regional RC associations throughout Slovenia, and it is also in charge of ensuring a sufficient number of blood donors, while the Blood Transfusion Service is in charge of blood donation, collection, processing and supply of safe blood and blood products. The work of Blood Transfusion Service and the Red Cross is closely interrelated in the field of blood donations.

Regarding blood donation sessions it was found that:

In the year 2005, 10,812 persons donated blood for the first time, i.e. 11% of all registered blood donors.

A total of 1,100 blood donation sessions were organized, of which 317 were field sessions.

95,523 people reported for blood donation, among whom 33% were female and 67% male.

86,373 blood collections were performed, including 1,081 plasmaphereses and 1,102 platelet aphereses.

Among 56,934 blood donors, 63% donated blood once, 27% twice, 8% three times and 2% four times in the year 2005.

Guaranteed supply

In 2005, blood was provided for all patients requiring blood transfusion. Through our activities of blood processing and storage, the Blood Transfusion Service in Slovenia provides high-quality and comprehensive services and professional support to the users of its blood products, adjusting to their needs and keeping up with development.

Diseases and hemorrhages that endanger human health or life due to lack of blood and its components can be treated with transfusions.
Normally, transfusions are done to replace only the blood component that the patient is deficient in. Therefore, blood derivatives are produced which contain necessary specific elements of blood (blood components) and plasma (medicinal products derived from blood).

Red blood cell products are administered to anemic patients. Platelet transfusions are used to stop bleeding. Coagulation disorders are treated with plasma and coagulation factors. White blood cells and immunoglobulins are administered to boost the immune system in case of deficiencies. Albumin is administered to treat blood protein deficiency and maintain blood volume.

Blood must not contain viruses or bacteria that could be transmitted with blood, which is ensured by consistent implementation of several measures. These include: rationalization of transfusion treatment and limiting of transfusions, selection of safe blood donors, screening tests, quality assurance during blood collection and processing, reduction and inactivation of viruses in blood products, retrograde investigation and quarantine of products under suspicion of infection.
In Slovenia, each blood unit is tested for the following pathogens:
- Syphilis: anti-Treponema pallidum (since 1960),
- Hepatitis B: HBsAg (since 1970),
- AIDS: anti-HIV 1/2 (since 1986),
- Hepatitis C: anti-HCV (since 1993),
- Hepatitis C: HCV RNA (using the PCR method since 2000).

Blood safety means that there are no adverse consequences for the recipient. In order to ensure safety, the above-mentioned assays for detecting infection markers are performed for infections which are transmitted with blood, and each blood component is stored in the required and optimal manner.

Number of registered blood donors, collections and deferrals by location in 2005

Transfusion sites	No. of registered donors	No. of collections	No. of deferrals
Celje	9,606	9,080	526
Izola	5,270	4,852	418
Jesenice	1,391	1,310	81
Maribor	13,284	11,535	1,749
Murska Sobota	4,781	4,501	280
Nova Gorica	3,913	3,708	205
Novo Mesto	4,303	4,087	216
Ptuj	3,555	3,195	360
Slovenj Gradec	3,018	2,789	229
Trbovlje	1,433	1,389	44
BTCS Ljubljana	44,969	39,927	5,042
Slovenia	**95,523**	**86,373**	**9,150**

Number of blood component units prepared from whole blood by location in 2005

Transfusion sites	No. of units Conc. erythrocytes	No. of units Conc. platelets	No. of units Fresh frozen plasma
Celje	9,037	2,976	8,979
Izola	4,718	209	4,624
Maribor	19,034	7,221	19,849
Novo Mesto	3,999	108	3,991
Slovenj Gradec	2,743	243	2,737
BTCS Ljubljana	42,721	25,236	43,759
Slovenia	**82,252**	**35,993**	**83,939**

Number of blood component units prepared and issued:

Units prepared:
82,252 units of concentrated erythrocytes
35,993 units of concentrated platelets
83,939 units of fresh frozen plasma

Units issued to patients:
76,340 units of concentrated erythrocytes
25,535 units of concentrated platelets
33,419 units of fresh frozen plasma

A total of 425,038 tests were performed to ensure blood safety.

Results of screening tests in Slovenia for 2005

(N = first-time blood donor, i.e. first donated unit of blood ; R = regular blood donor)

Year 2005	No. of tested units	First-time blood donors	HBsAg	ANTI-HCV	ANTI-HIV	ANTI-TP
Slovenia total	**85,344**	**10,812**	**12 (10 N, 2 R)**	**2 (N)**	**2 (2 R)**	**7 (4 N, 3 R)**
Testing sites						
LJUBLJANA	54,780	6,192	9 (8 N, 1 R)	2 (2 N)	0	6 (3 N, 3 R)
MARIBOR	29,914	4,620	3 (2 N, 1 R)	0	2 (2 R)	1 (1N)
CELJE	650	/	0	0	0	0

In 2005, screening tests began to be performed only in Ljubljana and Maribor.

In Slovenia, about 90,000 units of donated blood are tested each year. The number of blood donors is lower than the number of actually donated blood units, as some blood donors donate blood 3 to 4 times a year. The greatest number of viral infections is found among new blood donors, i.e. those giving blood for the first time. Only 7 to 12% of newly diagnosed infections are found among regular blood donors.

Results of screening tests for HCV RNA using the PCR method in Slovene blood donors for 2005

No. of tested persons	Anti-HCV neg. HCV RNA pos.	Anti-HCV pos. HCV RNA pos.	Anti-HCV pos. HCV RNA neg.	**Total no. of detected anti-HCV pos.**
84,680	0	3	1	**4**

Diagnostic services

Immunohematologic tests enable safe blood transfusions and transplantation of organs and tissues, and prevent certain adverse immune phenomena following transfusion or transplantation and during pregnancy.

Whenever a patient is expected to require a blood transfusion, his/her ABO and Rh blood types need to be determined and the so-called compatibility (cross-matching test) needs to be performed which ensures that no adverse reactions will occur due to erythrocyte antibodies following a transfusion. Patients always receive blood of their own ABO and Rh types, and only in exceptional cases is it permissible to transfuse blood of other blood types.

In a certain percentage of patients, the compatibility (cross-matching) test shows the presence of erythrocyte antibodies, and this necessitates additional tests, specifications of erythrocyte antibodies. Then, on the basis of the determined specificity of erythrocyte antibodies, the patient can receive a transfusion of compatible erythrocyte components.

In certain groups of patients, primarily those with hemolytic anemia, two other tests – the direct and indirect Coombs test – must be performed as part of diagnostic procedure in order to ensure a successful treatment.

By performing immunohematologic and immunogenetic tests, the Blood Transfusion Service is also participating in the preparation of patients for transplantations of various organs and tissues. In 2005, 28 kidneys, 5 hearts and 13 livers were transplanted in Slovenia, along with 68 completed transplantations of hematopoietic stem cells, 57 of which were autologous, 6 were from a related donor and 5 from an unrelated donor.

Tests are also conducted to detect potential incompatibility of fetal erythrocyte antigens with those of the mother, which causes so-called fetomaternal incompatibility and hemolytic related diseases of the fetus and newborn.

Immunohematologic activities also involve the detection of platelet antibodies which develop as a result of an immune response to platelet antigens and lead to a decrease in the platelet count.
The presence of platelet antibodies is determined in the serum as well as on platelets, along with the specificity of the detected antibodies.

Granulocyte tests constitute an important part of the Blood Transfusion Service's activities, including granulocyte serology and molecular biology tests. Granulocyte antibodies cause alloimmune neutropenia in newborns, autoimmune neutropenia, drug-related neutropenia and certain transfusion reactions, such as the TRALI syndrome and non-hemolytic febrile reactions.
Granulocyte antibodies may develop during pregnancy or after blood transfusions due to potential incompatibility of granulocyte antigens between the mother and fetus or in the blood recipient and after transfusions. Granulocyte autoantibodies are most commonly found in children during the first years of their life, but later they disappear spontaneously in most cases. In elderly patients, they are mostly found by coincidence and appear as part of other autoimmune and malignant diseases.

The BTCS also conducts true certain special activities in the field of cellular engineering and molecular biology. For example, fetal genes can be determined from a sample of the amniotic fluid and hematopoietic and other stem cells are prepared as starting points for various applications in neurology, cardiology (treatment of myocardial infarction), and gynecology (treatment of infertility). Technology is also being developed for the use of platelets in the treatment of bone fractures.

Molecular biology methods are also extremely important in cases of unclear or inconsistent serological results. Such tests have been performed primarily in connection with blood type systems ABO and Rh, Kell, Kidd and Duffy.

As part of immunohematologic tests, the Blood Transfusion Service performed:

121,558 compatibility tests
67,845 ABO and RhD blood typing tests
41,526 indirect Coombs tests
10,265 direct Coombs tests
2,413 specifications of erythrocyte antibodies
4,472 tests for HDN prevention
749 tests for detecting platelet antibodies
31 granulocyte tests
293 molecular biology tests

As part of microbiological testing, the Blood Transfusion Service performed the following tests for patients and other subjects:

5,292 tests for hepatitis A virus
48,130 tests for hepatitis B virus
16,216 tests for hepatitis C virus
246 tests for hepatitis D virus
14,560 tests for HIV infection
11,324 tests for antibodies against Treponema pallidum
227 tests for antibodies against CMV

Photo: Dnevnik

Therapeutic services

Alexandra was here, and Andrej – Book of Impressions 2005

Transfusion medicine is not intended only for substitute treatment of patients with blood components and medicinal products prepared from blood and plasma – it also includes a series of other therapeutic procedures.

Therapeutic collection of blood and blood components is part of palliative treatment of certain diseases. Depending on the nature of the disease, whole blood can be taken from patients, or only cells or plasma with the use of an apheresis procedure.

Preoperative autotransfusion is an alternative method of transfusion treatment in which the patient's own, autologous blood is taken and appropriately stored, and is later transfused back to the same patient during or after a planned surgery. Autotransfusion is the option used primarily in patients scheduled for orthopedic surgical procedures or in those with confirmed erythrocyte antibodies when compatible allogenic blood cannot be provided. In most cases, one to two units of blood are taken 7 to 14 days prior to the planned surgical procedure.

The Blood Transfusion Service performed:

2,035 collections of autologous blood and 1,047 therapeutic collections of whole blood.

The BTCS also performed:

6 leukaphereses,
85 collections of hematopoietic stem cells from venous blood,
60 transfusions of hematopoietic stem cells,
3 procedures for concentrating bone marrow using a cell separator,
3 procedures for collecting and storing umbilical blood,
1 therapeutic plasmapheresis.

Bone marrow registry

The year 2005 was very successful, as more new members were registered than previously existed at the end of 2004.

Such a marked increase in the registry not only signifies a greater number of new donors and thus a higher probability that an appropriate donor for a certain patient will be found quickly, it also shows an increasing knowledge of the problems related to transplantation of hematopoietic stem cells (hereinafter HSC) and greater awareness and generosity among people who have decided to help those in distress in this noble way.
In 2005, hematopoietic stem cells were transplanted to five Slovene patients from unrelated donors who were all members of foreign registries, and HSC transplantation was made possible to two patients from abroad for whom two of our registry members were chosen as appropriate matches.

Another important result of our efforts was the establishment of a network of Donor Centers within the Slovenian Donor registry, which was implemented in cooperation with almost all transfusion medicine departments in local hospitals in order to facilitate the entry of new donors locally in various parts of Slovenia.

Internationally, the BTCS signed a partnership agreement in 2005 with the largest individual national registry in the world, the National Marrow Donor Program (NMDP) from the US. The Slovenia Donor registry is thus persistently solidifying its position in the world. Considering its population, Slovenia is contributing a relatively large proportion of donors to the Bone Marrow Donors Worldwide registry with its total number of 10,149,104 donors.
Such major success could not be achieved without the dedicated work of the employees of the BTCS, the RS Public Institute for Transplantation of Organs and Tissues, Slovenija-Transplant, and the Ljubljana Medical Center, namely the Transplantation Center at the Hematology Department, which operates within the framework of the Internal Medicine Clinic, and the Oncology and Hematology Department, which is part of the Pediatric Clinic.

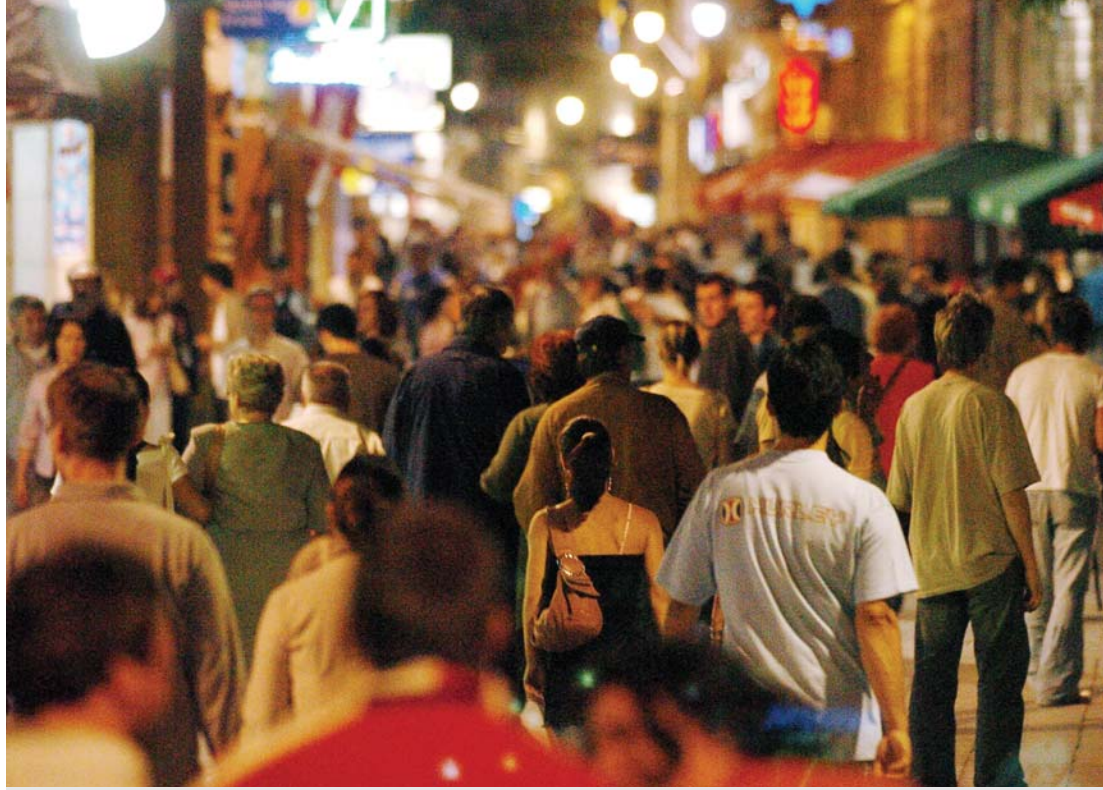


Photo: Dnevnik

Registry increased by 100%

In 2005, 2,514 new bone marrow donors were acquired. At the end of the year, the Slovene Bone Marrow Registry contained 5,010 donors. To meet the needs of patients, four unrelated donors from the German Register and one from the Czech Register were also recruited.

Transfusion telemedicine

In practice, telemedicine is the provision of medical services from a remote site. In the previous decade, it was reserved exclusively for selected areas of medicine, such as collective surgical procedures performed by teams of top experts located on different continents.

Slovenia's first telemedical system was launched in the Blood Transfusion Service and has been operating on a trial basis since December 2005. It provides services between Ljubljana, Trbovlje and Novo Mesto, but plans are in place to extend it to all TDs in Slovenia next year.

The system makes it possible for an on-duty doctor at a TD to send a professional question to a specialist transfusiologist located at the consultation center. The question always contains a digital picture of the laboratory results and all available medical data on the actual case. This enables the delivery of identical, high quality and professional blood transfusion services throughout the country, even when the department in question does not have a transfusiologist available.

The project was started in 2003 through cooperation between transfusion medicine specialists and electrical engineers (Irena Bricl, Marko Breskvar) in order to enable remote reading and interpretation of laboratory results. This was followed by weeks of highly creative cooperation and research for appropriate solutions. In collaboration with the Faculty of Electrical Engineering, a test system was produced, which enabled the capture of immunohematologic test results in a laboratory on a gel card and its transmission in digital form via the computer network to a personal computer at another site. This was first performed on a trial basis from the on-duty laboratory to the office of the on-duty doctor, but soon afterwards the test system was presented to the public for the first time. On 18 April 2003, the first telemedical service in the history of Slovene transfusiology was performed at a presentation for heads of Slovene TDs. From a laboratory in the central building of the BTCS, the image of selected laboratory results was transmitted to a remote presentation class, in which a doctor, performing the role of a teleconsultant, publicly read these results and sent the response to the on-duty doctor. In this way, a medical service was performed from a remote site by using telecommunications equipment.

The next milestone was achieved on 16 December 2005, when the pilot system was successfully presented live for the first time to the regional director of the World Health Organization, the Minister of Health and directors of certain Slovene hospitals. The results of the pilot system's operation are being closely monitored, as our desire is to adjust the system as much as possible to the real needs and desires of its users. At the same time, training of doctors is taking place, and with their practical remarks they are making a significant contribution to the development of a user-friendly application interface. The computer system is learning as well, as it actually monitors and records the work of the specialist transfusiologist. With knowledge acquired in this way, the computer program will be able to recognize laboratory results automatically in the future, prevent possible human error and provide professional guidance for the most appropriate use of the system.

The BTCS has created an important advantage for itself in the field of telemedicine. It is our duty to use it, so we are even considering the expansion of telemedical applications outside of the professional boundaries of transfusion medicine.

Membership in the European Blood Alliance

Since April 2005, Slovenia has been officially accepted for full regular membership in the EBA organization (European Blood Alliance) through the BTCS.

The EBA was founded in 1998 by Belgium, Finland, France, Ireland, Luxembourg, the Netherlands, Portugal, Austria, England and Scotland. From its founding to this day, other regular members joined this organization (Denmark and Germany), as well as so called associate members (Norway, Switzerland, Wales and Northern Ireland). The criteria for membership in the EBA organization are defined in its founding charter. They refer to the national transfusion departments of European Union member states and are based on the principles of voluntary non-remunerated blood donation. The goal of the EBA organization is to "develop and maintain the organizational framework of national Blood Transfusion Service in the European Union".

The BTCS applied for membership in September 2004. The accession application demanded detailed and specific data on the organization of transfusion activities in Slovenia and on the manner of maintaining the blood supply, including data on the collection, processing and testing of blood, the number of reactive samples found, and the legislative basis for transfusion activities, as well as educational and research activities, financing, etc.

Membership in the EBA is proof that the Blood Transfusion Service in Slovenia complies with the provisions of Directive 2002/98/EC and fulfils strict professional and organizational criteria concerning the supply of blood and blood products.

News

- Automation of hemoglobin determination prior to blood donation,
- New technology of screening tests for blood donors for various pathogens causing infections (Architect system),
- Introduction of routine bacteriological controls for the purpose of quality control of platelet components,
- Introduction of the storage of patients' blood samples for pretransfusion testing,
- Introduction of blood sample bar-code labeling for all patients,
- Introduction of genotyping for blood group antigens Lu (Lutheran), Di (Diego), Wr (Wright), Yt (Cartwright), Co (Colton), Kn (Knops) and Do (Dombrock),
- Introduction of a web (computer) connection between blood collection teams in the field and the BTCS' central computer,
- Use of mixing weighing scales for blood collection in the field,
- Reintroduction of therapeutic plasmaphereses,
- Introduction of "cold chain" principles (constant changing of temperature during transport of blood and blood components, training of transport personnel and drivers, and accompanying transport bills),
- Introduction of a central computer for temperature control in cooling rooms.

V imenu green dragons
-ov smo se nekateri
odlocili za to
humano potezo.

Photo: Dnevnik

On the behalf of the Green Dragons, some of us have decided on this humane gesture. G. D. – Book of Impressions 2006

Research and development activities

Within the scope of the BTCS there are three research groups which fulfill the criteria and requirements of the Slovenian Research Agency (ARRS) for the management of national projects and the conducting of research activities. The BTCS is a member of the center of excellence “Biotechnology and Pharmacy”, within the framework of which it participates as a partner in the research and development project entitled: “Development of New Medicines and Biochips” (project duration: 15 July 2004 to 14 June 2007).

In addition, BTCS researchers also participate in the national research program P4-0176 (D): “Molecular Biotechnology: from the Dynamics of Biological Systems to Applications” (duration: 1 January 2004 to 31 December 2008).

A list of all other scientific-research and developmental activities is shown below under the relevant categories:

International research projects

Bilateral project entitled: “Humanization of Monoclonal Antibodies Against TNF” – between the Republic of Slovenia and the PR of China, coordinated jointly by the BTCS and the Institute of Biological Products of Chengdu (duration: 2002 to 2005).

National research projects

More detailed data on national research projects coordinated by the BTCS and those in which the BTCS is a participating partner can be found at the web site: http://sicris.izum.si/

Conducted at the BTCS

ARRS code	Project title	Duration
L4-6325	Development of tissue engineering bone substitutes for use in parodontology, traumatology and orthopedics	1 Feb. 2004 to 30 Jan. 2007
L3-6006	Prionic diseases and their diagnosis	1 July 2004 to 30 June 2007
L3-6011	Isolation, characterization and differentiation of human stem cells as the basis for cell therapy	1 July 2004 to 30 June 2007
L1-6295	Dendritic cells prepared from human monocytes – activators and modulators of specific immune responses	1 July 2004 to 30 June 2007
L7-7457 (D)	Use of cultured skin substitutes for the treatment of chronic and acute wounds	1 Sept. 2005 to 31 August 2008

Conducted at other research organizations

ARRS code	Project title	Duration
J3-6072	Genetic background of chronic diseases in children and adolescents II	1 July 2004 to 30 June 2007
J3-6290	Treatment unhealed and poorly healed fractures of long bones using platelet enriched plasma	1 July 2004 to 30 June 2007
L3-6265	Use of cultured autologous cartilage cells for the treatment of vesicourethral reflux	1 Feb. 2004 to 30 Jan. 2007
J1-6001	Chemical and biological tracing of neonicotinoids and their effects on the environment	1 Feb. 2004 to 30 Jan. 2007

Education

The following forms of education are performed as part of the Blood Transfusion Services activities:

1. SECONDARY SCHOOL EDUCATION at the:
   - Secondary School of Pharmacy, Cosmetology and Health Care
   - Medical Secondary School
2. UNDERGRADUATE EDUCATION in transfusion medicine at the:
   - Medical Faculty
   - Faculty of Pharmacy
   - Faculty of Chemistry and Chemical Engineering
   - Health Care College*
3. POSTGRADUATE EDUCATION:
   - internship for bachelors of science in pharmacy
   - specialization in clinical pharmacy and drug design
   - specialization in transfusion medicine
   - specializations in other clinical specialties, such as surgery, orthopedics, gynecology and obstetrics, anesthesiology, clinical microbiology, internal medicine and pediatrics,
   - course in transfusion medicine for health-care workers with secondary, high, higher professional and higher education levels working in the field of transfusion activity at transfusion institutions and hospitals.

As part of its undergraduate educational activities, the BTCS applied to the Ministry of Health to be awarded the title of teaching institution for the performance of practical instruction for secondary school and university students in individual work areas or for individual profiles. During the preparation of this report, the BTCS already received a decision on having been awarded the title of teaching institution. This will authorize the performance of practical instruction to students of professional secondary school educational curricula for the jobs of nursing technician and laboratory technician, and secondary school professional educational curricula for nurses, as well as for students of university professional study curricula in the fields of nursing and laboratory biomedicine and students of university study curricula in the fields of medicine, pharmacy and biochemistry, and students of postgraduate biomedical programs.

In 2005, the following international educational events were organized:

- The 7th postgraduate seminar titled “Blood Therapy in Gastroenterology”, 9 and 10 December 2005, Portorož;
- Professional seminars organized by the Association of Transfusion Medicine, from 22 to 23 April 2005 in Kranjska Gora, and from 14 to 15 October 2005 in Radenci;
- The 3rd professional meeting titled “Good Transfusion Clinical Practice”, on 7 April 2005 in Maribor, with international participation;
- Training on cold chain assurance in the transport of blood, blood components and medicinal products derived from blood in Ljubljana.

**The BTCS was also invited to prepare a program for the curriculum of the School of Nursing in Jesenice.*

The BTCS successfully hosted a meeting organized by the World Health Organization:

- From 21 to 23 April 2005, there was a regional meeting of directors of transfusion centers. The participants included 53 directors from 32 countries in Central and Eastern Europe and the former Soviet Union;
- From 17 to 18 June 2005, a training course took place in cooperation with the Ministry of Health of the RS and the WHO, as part of the Stability Pact.

The BTCS is cooperating professionally with numerous international organizations:

- with the WHO, in the organization of workshops on implementing a high-quality and safe blood supply in Central and Eastern European countries;
- with the Sarajevo Institute for Blood Transfusion, the BTCS has traditionally cooperated in the education of their experts on the introduction of cytaphereses and bone marrow transplantations;
- with the Blood Bank and Institute of Biological Products in Chengdu, China;
- with the Tissue Typing Laboratory at the Dept. of Blood Group Serology, AKH, Vienna, Austria, in the field of sequencing and external quality controls (EFI);
- with the Immunogenetics & Transplantation Immunology Department of the Immunohematology & Blood Bank, Leiden, the Netherlands – Eurotransplant reference laboratory , in the field of determining antibody allosensitization and external controls EFI;
- with the Tissue Typing Laboratory at the University Hospital Maastricht, the Netherlands, in the field of external quality controls EFI;
- with the HLA Laboratory, BRK Blutspendedienst, Klinikum der Ludwig Maximilians Universitaet Muenchen, Germany, in the field of HLA typing of unrelated HSC donors;
- with the UCLA Immunogenetics Center, Los Angeles, USA, in the field of external quality controls for serological HLA typing;
- with AVIS Veneto Treviso in the field of promotion of HSC donation;
- with the Treviso Cord Blood Bank in the field of research of mesenchymal stem cells;
- with international student exchanges in the fields of nursing and laboratory biomedicine;
- with the CDC, Atlanta, USA, in the field of external quality controls for determination of HIV antibodies;
- with the VQC EQAS, a part of WHO, in the field of external controls for serological and NAT testing for viral markers;
- through cooperation in various programs of external controls for infection markers (UK NEQAS Great Britain, Labquality Finland);
- with the CLB Amsterdam, the Netherlands, in the field of prenatal testing;
- with the Blutspendedienst SRK in Bern, Switzerland, in the field of external quality controls for immunohematologic testing;
- with the UK National Blood Service in Manchester, Great Britain, in the field of external quality controls for anti-D quantitation;
- with the IBGRL, Red Cell Reference Department in Bristol, Great Britain, in the field of immunohematology.

During the school year, all transfusion facilities are visited by primary school students, primarily third and seventh grade students, as well as secondary school and university students. The students are informed of blood collection activities and the activities of transfusion departments, as they are related to their school curricula.

Transfusion facilities also perform the education for organizers of blood collection sessions with the Red Cross of Slovenia, and for bone marrow donors who are included in the register of unrelated donors.

Legislation

Health-Care Activities Act
(ZZDej, Official Gazette of the RS (OG RS), No. 9/1992)

Blood Supply Act
(ZPKrv, OG RS, No. 104/2006)

Regulations concerning compulsory blood tests for traces of infection with blood-transmissible pathogens
(OG RS, No. 100/2002)

Regulations concerning the storage, issuing, transport and disposal of unused blood and blood products
(OG RS, No. 100/2002)

Regulations concerning the contents and collection of documentation on the use of blood, blood products and blood-based medicinal preparations, including biotechnological blood substitutes
(OG RS, No. 70/2003)

Regulations concerning the validity of the Recommendation for the preparation, use and quality assurance of blood components
(OG RS, No. 64/2002)

Regulations concerning professional medical standards for blood collection
(OG RS, No. 73/2003)

Regulations concerning the procedure for collecting, storing and using hematopoietic stem cells
(OG RS, No. 104/2003)

Regulations concerning the conditions for patients obtaining their own blood and collecting individual cells and blood plasma
(OG RS, No. 118/2003)

Regulations concerning the conditions for the organization and implementation of blood donation campaigns
(OG RS, No. 92/2003)

Directive 2002/98/EC of the European Parliament and of the Council (dated 27 January 2003) setting standards of quality and safety for the collection, testing, processing, storage and distribution of human blood and blood components, and the Supplement to Directive 2001/83/EC,

Directive 2005/62/EC of the European Commission (30 September 2005) on the implementation of Directive 2002/98/EC of the European Parliament and of the Council concerning Community standards and specifications relating to a quality system for blood establishments

Directive 2005/61/EC of the European Commission (30 September 2005) implementing Directive 2002/98/EC of the European Parliament and of the Council as regards traceability requirements and notification of serious adverse reactions and events

Directive 2004/33/EC of the European Commission (22 March 2004) implementing Directive 2002/98/EC of the European Parliament and of the Council as regards certain technical requirements for blood and blood components.

Recommendations on the preparation, use and quality assurance of blood components, Council of Europe, 8th Edition, 2002

Publications

ARTICLES AND OTHER SCIENTIFIC AND PROFESSIONAL CONTRIBUTIONS
1.01 Original scientific articles

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