



# ISBT SEOUL 2014

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RAPORT Z 33 MIĘDZYNARODOWEGO KONGRESU  
TOWARZYSTWA TRANSFUZJOLOGÓW

W dniach od 31 maja do 05 czerwca 2014 w Seulu w Korei Południowej odbyła się 33 Światowa Konferencja Międzynarodowego Towarzystwa Transfuzjologii (ISBT).

ISBT założone w roku 1935 jest wiodącym międzynarodowym towarzystwem zawodowym zrzeszającym ponad 1500 specjalistów w dziedzinie transfuzjologii i medycyny transplantacyjnej z ponad 100 krajów na całym świecie. Celem strategicznym ISBT jest: "propagowanie wiedzy o transfuzjologii oraz służenie interesom dawców i pacjentów". W ramach swej działalności statutowej ISBT koncentruje się w szczególności na:

- promowaniu i utrzymaniu wysokiego poziomu etycznego, medycznego i naukowego w medycynie transfuzji krwi oraz nauk związanych z terapią krwi;
- promowaniu i wspieraniu rozwoju programów współpracy tzw. dobrych praktyk, w szczególności w kontekście słabiej rozwiniętych społeczności;
- wymianie poglądów, doświadczeń i informacji między członkami Towarzystwa i innymi stowarzyszeniami;
- tworzeniu globalnych i regionalnych możliwości prezentacji badań, nowych rozwiązań i koncepcji w medycynie transfuzji krwi;
- nawiązywaniu bliskich, wzajemnych stosunków współpracy z rządowymi oraz pozarządowymi organizacjami, w celu rozpowszechniania wiedzy o tym, jak nauka i medycyna transfuzji mogą najlepiej służyć dawców i pacjentów.

Ponadto ISBT zajmują się również:

- publikowaniem czasopism naukowych i edukacyjnych;
- publikowaniem e-newsletterów;
- wspieraniem regionalnych warsztatów, seminariów i konferencji;
- organizowaniem międzynarodowych i regionalnych kongresów;
- wsparciem finansowym ludzi z krajów o niskich i średnich wskaźnikach rozwoju według UNDP poprzez program stypendiów.

W ramach 33 Międzynarodowego Kongresu Transfuzjologii zorganizowane były wykłady, prelekcje, panele dyskusyjne oraz sesje, w których możliwość uczestnictwa mieli członkowie ISBT oraz zainteresowani specjaliści z dziedziny transfuzjologii oraz nauk pokrewnych. Podczas Kongresu swoją obecność zaznaczyło również Regionalne Centrum Krwiodawstwa i Krwiolécznictwa w Poznaniu, którego prace naukowe zostały przyjęte przez komisję ekspercką do prezentacji podczas sesji plakatowej odbywającej się trzeciego dnia Konferencji. Należy również odnotować, iż dodatkowo 3 z 6 prac zostały wyselekcjonowane do multimedialnej prezentacji elektronicznej (tzw. e-posters). Wszystkie prace naukowe zostały opublikowane w międzynarodowym periodyku Vox Sanguinis (The International Journal of Transfusion Medicine).

Prezentacja prac naukowych stanowi załącznik do niniejszego raportu.

Dyrektor  
REGIONALNEGO CENTRUM  
KRWIODAWSTWA I KRWIOLÉCZNICTWA  
w Poznaniu  
lek. med. Krzysztof Olszowski

**Prace naukowe pracowników Regionalnego Centrum Krwiodawstwa i Krwiolecznictwa w Poznaniu zakwalifikowane do sesji plakatowej odbywającej się podczas 33 Międzynarodowego Kongresu Towarzystwa Transfuzjologów.**

1. Autor: lek. med. Bożena Andrys

Retrospektywna analiza związku z transfuzją powikłań poprzetoczeniowych zgłaszanych do Regionalnego Centrum Krwiodawstwa i Krwiolecznictwa w Poznaniu w latach 2010-2013.

2. Autor: mgr Alicja Bukowska (Dodatkowo prezentacja e-posters).

Zakażenia wirusami HBV, HCV, i HIV w okienku serologicznym u dawców RCKiK Poznań w latach 2009-2013.

3. Autor: lek. med. Barbara Janowska - Stuchlak (Dodatkowo prezentacja e-posters).

Analiza przyczyn dyskwalifikacji pobranych porcji krwi pępowinowej w latach 2011 - 2012 oraz ocena jakościowa po rozmrożeniu jednostek zdyskwalifikowanych.

4. Autor: mgr Roman Klupieć (Dodatkowo prezentacja e-posters).

Profil dawców krwi pełnej pobranej w Regionalnym Centrum Krwiodawstwa i Krwiolecznictwa w Poznaniu na przestrzeni (w ciągu) ostatnich 10 lat.

5. Autor: mgr Emilia Przybylska

Udział kobiet oddających krew po raz pierwszy w województwie wielkopolskim, na terenie objętym działalnością Regionalnego Centrum Krwiodawstwa i Krwiolecznictwa w Poznaniu w latach 2003 -2013.

6. Autor: lek. med. Anna Zawadzka

Edukacja dawców krwi i potencjalnych dawców krwi prowadzona przez Regionalne Centrum Krwiodawstwa i Krwiolecznictwa w Poznaniu dotycząca zmniejszenia ryzyka zakażenia wirusowego dawcy i w związku z tym zagrożenia potransfuzyjnego biorcy jako ważny element w systemie czuwania nad bezpieczeństwem krwi.

**Authors:**  
**Bożena Andrys M.D., Krzysztof Olbromski M.D.**

## THE RETROSPECTIVE ANALYSIS OF THE CONNECTIONS BETWEEN TRANSFUSIONS AND ADVERSE REACTIONS REPORTED TO THE REGIONAL BLOOD CENTER IN POZNAŃ IN YEARS 2010-2013.

### Background:

The adverse reactions connected with transfusions are a diverse group of symptoms observed in patients receiving blood and blood components. Due to the fact that blood is the biological material, it can not be a first-line cure, in the cases in which there are other therapeutic methods. Therefore, it is often used in patients with severe clinical conditions, terminal patients in whom no therapy gives the desired effect, and side effects of treatment superimpose on the general bad condition of the patient at the same time, making it more difficult to evaluate complications unambiguously.

### Aims:

The aim of this study was to evaluate the connection between the transfusions and adverse reactions in patients reported to the Regional Blood Center in Poznań.

### Methods:

We analyzed the adverse reaction reporting forms submitted to the Regional Blood Center in Poznań in years 2010-2013 and the results of laboratory tests including serological and microbiological tests. All adverse reactions after blood transfusions were divided into groups depending on the type of blood component transfusion which resulted in adverse reactions in the recipient. Then they assigned to a specific type of complication depending on the symptoms. The evaluation of connections between the transfusions and complications was made on the basis of four-level scale:

- 0 **Excluded** - in the case of clear evidence that the adverse reaction can be attributed to other causes than the blood or blood components
- 1 **Doubtful** - if on the basis of the evidence it could not be determined whether the adverse reaction could be attributed to blood or blood components, or other causes
- 2 **Possible** - for clear evidence that adverse reaction can be attributed to blood or blood components
- 3 **Sure, proven** - for conclusive evidence that adverse reaction can be attributed to blood or blood components

### Results:

Table No.1 The evaluation of relationship of complications after transfusion reported to the Regional Blood Center in Poznań in years 2010-2013

Type of complications	RBCs Concentrate				Platelet Concentrate				FFP				Total
	Related to the transfusion				Related to the transfusion				Related to the transfusion				
	0	1	2	3	0	1	2	3	0	1	2	3	
Hemolysis		3	1	8				2				1	15
FNHTR	6	86	18			3	3			7	1		124
Allergy				27				14					52
Dyspnea		2	15			1			1	1			20
TACO			1	1									2
TRALI				3								1	4
Others	1	12	3							1			17
Sum	1	23	106	57		4	19		1	9	55		275
Total			187			23				65			

### Conclusions:

We analyzed 275 cases of adverse reaction in terms of their connection with blood transfusions. In 131 cases (47.6%) the connection with transfusion was proven, in 119 cases (43.3%) the connection between adverse reactions and transfusions was considered as possible, and in 25 cases (9.1%) the connections was rated as doubtful or excluded.

The evaluation of connection between complications and transfusion is difficult especially in those situations in which no laboratory abnormalities (serological or microbiological) can be found, and adverse reactions connected with transfusion superimposed on the symptoms and treatment of the underlying disease. In order to standardize the results, an evaluation algorithm of adverse reactions should be developed.

Until the evaluation algorithm of adverse reactions has been created, a team of experts consisting of specialists in the field of transfusion medicine and clinical immunology should be responsible for this analysis in Regional Blood Center in Poznań.

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Authors:  
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## INFECTIONS OF DONORS WITH HBV, HCV, AND HIV IN SEROLOGICAL WINDOW PERIOD IN THE REGIONAL BLOOD CENTER IN POZNAŃ IN YEARS 2009-2013.

### Background:

The standard procedure when testing for HBV, HCV and HIV in Polish Blood Donation System is performing serological screening tests, and then in samples with the negative results, tests based on molecular biology methods aimed at the detection of genetic material of the above mentioned viruses. This algorithm allows for the elimination of the serological window period, which is the period between the infection and the ability to detect a marker of the infection. Only blood, which received negative results on both stages, may be used for transfusion.

### Aims:

The aim of this study was to summarize the amount of infections, detected during the serological window period in the Regional Blood Center in Poznan in the five years past.

### Methods:

In the years 2009-2013 almost half a million donations were tested in Regional Blood Center in Poznań. For examinations using serological methods, at different time period, the Abbott and Ortho tests were used. The studies using molecular biology methods were performed with the help of equipment and technology based on Real Time PCR (pool size: 6 donation) and TMA (pool size: 8 donation). In several donations the infection was detected using the tests of molecular biology, despite the absence of serological markers of infection. Each time they were confirmed by discriminatory tests performed in Regional Blood Center in Poznań and in the Institute of Hematology and Blood Transfusion in Warsaw. The list includes only the detections, that left no doubts in diagnostics.

### Results:

Number of donations and detected infections is shown in the table below.

Year	Number of donations	HBV	HCV	HIV
2009	88024	2	-	-
2010	87944	2	-	-
2011	89852	5	-	-
2012	90763	-	2	1
2013	90967	-	-	1
Total	447550	9	2	2

In total 13 out of 447,550 infections were detected within the serological window period i.e. 0,003% of the total number of donations.

The chart below illustrates the quantitative distribution by type of virus:



### Conclusions:

- HBV virus predominates among viruses detected during the serological window period;
- infected donations represent a small percentage of the total number of donations;
- definitely the use of molecular biology methods increases safety of the transfusion eliminating the risk of transmission of infection in the serological window period.

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## THE PROFILE OF THE WHOLE BLOOD DONORS AT THE REGIONAL BLOOD CENTER IN POZNAŃ IN THE LAST 10 YEARS.

### Background:

In Poland, the only authorized entities for the collection, processing, storage and distribution of blood and blood components are Blood Centers. There are 21 Regional Blood Centers, one Military Blood Center and one Blood Center of the Ministry of the Interior Affairs. The Regional Blood Center in Poznań is one of the largest institutions in Poland. It supplies blood components to 36 Hospitals in Poznań and the surrounding area.

In the last few years we have seen an increase in demand for RBCs and have recorded increasing number of transfused units of RBCs.

### Aims:

The analysis of whole blood donors at the Regional Blood Center in Poznań in the last 10 years, regarding the age and gender of donors and also the kind of donation: the first-time and multiple. This analysis gives the possibility to identify the least numerous group of donors in order to find a way to increase blood donation in this group.

### Methods:

The whole blood is collected both at the headquarters of Regional Blood Center in Poznań, and in 13 satellite collection units (located in hospitals around city of Poznań - within the radius of 120 km) and in mobile collection units. Mobile collection units are in operation in different places, for example: factories, state institutions, schools.

### Results:

are shown in Table below.

Year	Collected unit of whole blood - total	First-time blood donors	Multiple blood donors	Males	Females	Age of the donor 18-45 years	Age of the donor 46-55 years	Age of the donor <18 or >65 years
2003	58147	17618	40529	48438	9709	53439	4549	159
2004	62526	17624	44902	50707	11819	53825	8598	103
2005	64011	18848	45163	55656	8355	49309	7315	72
2006	57782	20187	37595	48357	9425	51630	6112	40
2007	70974	22062	48912	60189	10785	62813	8126	35
2008	77950	22640	55310	65723	12227	71681	6217	52
2009	86432	22825	63607	72678	13754	77209	9166	57
2010	85587	19864	65723	72053	13534	74967	10610	19
2011	87065	12399	74666	73257	13808	77461	9604	0
2012	87910	14989	72921	73068	14842	79955	7951	4
2013	88270	14136	34496	35013	13619	43953	4661	18

### Conclusions:

The results showed a constant increase in the number of blood donors. Among the donors, the vast majority are multiple male donors. We can observe a slight decrease in the number of first-time donors with the simultaneous increase in the number of multiple donors.

We should concentrate on the group of first-time donors by organizing lectures, meetings and other educational activities for them. At the same time the number of blood collections in the mobile units should be increased in order to keep the number of the multiple donors on the same level which can guarantee the proper supply of blood and its components.

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## THE PARTICIPATION OF WOMEN IN POPULATION OF THE FIRST-TIME BLOOD DONORS IN THE WIELKOPOLSKA REGION, IN THE AREA OF ACTIVITIES OF THE REGIONAL BLOOD CENTER IN POZNAŃ IN THE YEARS 2003-2013.

### Background:

The development of blood treatment resulted in the development of blood donation in Poland. The first blood collections from donors in Poznań took place in 1946. At the beginning the number of donors, only males, was very small and was approximately 100 per year. It gradually increased and in 1959 it amounted to 4900, whereas in 2013 the number of blood donors totaled 48,632, including 29% of first-time donors.

### Aims:

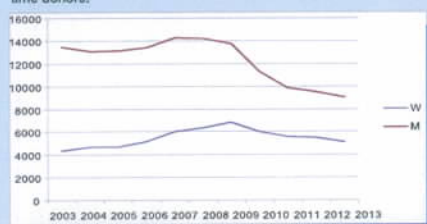
The aim of the study is to evaluate the dynamics of growth in the number of women who donate blood for the first time in the area of Wielkopolska Region covered by activities of the Regional Blood Center in Poznań in the years 2003-2013.

### Methods:

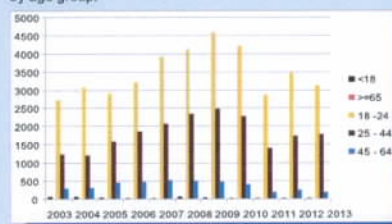
The lists of female blood donors at the Regional Blood Center in Poznań (including at its branch offices and mobile units) and the compilation of annual activity of the Regional Blood Center in Poznań in the years 2003-2013 were used for this study. The above mentioned data comes from the computer system "Blood Bank" which was implemented in the Regional Blood Center in Poznań in 1989.

### Results:

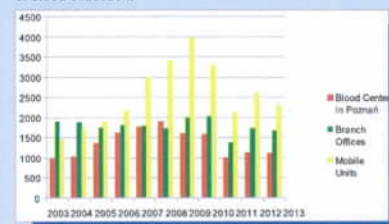
The comparison of the number of women and men as the first time donors.



The number of women donating blood for the first time by age group.



The number of women donating blood in relation to the place of blood collection.



1. The increase in the number of women among the first-time donors, in comparison to the number of donations from male donors.
2. The largest number of women who donate blood for the first time is between the ages of 18-24.
3. In the past 10 years the proportions of women who donate blood for the first time have changed between the stationary points and the mobile units.

### Conclusions:

We can see a significant increase in the number of women who donate blood for the first time: from 4321 in 2003, which accounted for 25% of all first-time donors to 5088 in 2013, i.e. 36%. The number of the first-time women donors is the greatest in the age group 18-24, which is more than half of all women in the group of women donors. It can be assumed that some kind of courage in the approach to blood donation and selfless desire to help others occurs more frequently in young people. We could observe an increase in the number of first-time donors mainly among women. In 2003, the total number of women who donate blood at the headquarters of Regional Blood Center amounted 974, which accounted for 22%, and in the mobile units 1444, which accounted 33% in relation to all first-time women donated blood for the first time at that year. In 2013, the total number of women who donate blood at the headquarters of Regional Blood Center amounted 1117, which accounted for 22%, and in the mobile units 2290, which accounted 45% in reference to all women donating blood for the first time this year. The increase in the number of women donating blood in mobile units by 12% suggests that organizing blood collections in mobile units promotes the idea of blood donation and broadens awareness of blood treatment and facilitates access to such forms of helping.

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Authors:  
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## THE EDUCATION OF BLOOD DONORS/POTENTIAL DONORS IN THE BLOOD CENTER IN POZNAŃ IN ORDER TO REDUCE RISKS OF VIRAL INFECTION OF THE DONOR AND TO DECREASE POST-TRANSFUSION RISK OF RECIPIENTS, AS AN ELEMENT OF THE HAEMOVIGILANCE SYSTEM.

### Background:

Haemovigilance is a set of established rules of conduct and control procedures which take into consideration all events from the donor and recipient. It aims to ensure the maximum safety of blood collection and transfusion and also analyzes, which adverse reactions in donors may affect safety of blood transfusions in recipients. The haemovigilance includes epidemiological data concerning donors with confirmed positive results for infectious diseases transmitted by blood transfusion, i.e. detected markers of blood-borne viruses.

### Methods:

The education of donors and potential donors was performed in years 2012-2013. Various materials: leaflets, brochures, newspaper articles were used. The meetings with young people were carried out in schools and also youth groups were invited for meetings to the Center. The visits were designed for: presentation of issues related to transfusion and each step of blood processing. The effectiveness of the actions was randomly checked with help of a special questionnaire in the Regional Blood Center in Poznań and in its offices at the time of registration of the donor. The questionnaire was filled anonymously with frequency of 100 tests per quarter. Firstly, the knowledge of donors was evaluated in relation to the risks of blood transmissible viral infections

The level of educational knowledge was satisfactory with the effectiveness of 95%. The idea of education activity was based on the analysis of epidemiological data in the years 2010-2011. It was assumed that carrying out the education may improve the epidemiological situation among the blood donors. Then the epidemiological data concerning donors in period before the education was entered /2010-2011/ and data from the years of education of donors and potential donors /2012-2013/ were summarized and compared. We analyzed the material including: the number of donors in each year, i.e. 2010, 2011, 2012, 2013 and the number of people in whom markers of blood-borne viruses were detected in particular years. (Table No.1)

Table No.1

Year	Number of donors	Number of infected donors			
		HCV	HBV	HIV	TOTAL
2010	49 320	63	71	4	138
2011	48 659	48	46	7	101
2012	48 774	40	43	4	87
2013	48 632	31	23	6	60

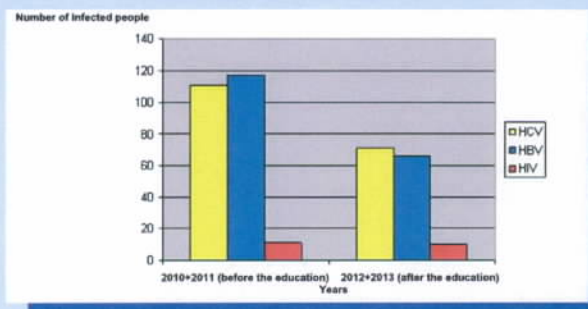
### Aims:

The aim of this study was to evaluate the effectiveness of educational activities undertaken by the staff of the Regional Blood Center in Poznań amongst a population of blood donors and potential donors in the area of territorial activities of the Center in years 2012-2013. The education was aimed to minimize the possibility of complications in transfusion recipients in the future, due to viral infections, by raising the awareness of donors regarding the sources of viral infections: HBV, HCV, HIV.

### Results:

There is a clear downward trend of viral infections in absolute numbers (Graph No.1). After the calculations, it was found out that there is a large statistical significance in favor of the events of the years 2012-2013, covered by the education activities in relation the years 2010-2011 before the education.

Graph No.1 Number of donors infected by blood-borne viruses



### Conclusions:

Educational activities undertaken in Regional Blood Center in Poznań seem successful and proved effective. Having analyzed the positive effect of the above-mentioned forms of education we considered as reasonable to continue various projects aimed at increasing knowledge and awareness of donors on viral infections connected with blood transfusion and its safety as a drug in the future.

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