EFFECT OF DONATED PLASMA ON LABORATORY PARAMETERS AND MOTIVATING FACTORS OF DONATED PLASMA

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OBJECTIVES

Medical therapeutic blood products, such as plasma-derived drugs, play a crucial role in health care. This research aims to reveal the motive for donating plasma among donors and to examine the changes in laboratory results during the donation.

METHODS

The retrospective research was conducted in a plasma centre in Hungary between 01.01.2019. and 30.12.2022(n=100). Scope of collected data: gender, haemoglobin (HGB), thrombocyte (PLT) hematocrit (HTC), red blood cell (RBC), white blood cell (WBC), total protein level, after the first (1st), fifth (5th) and fifteenth (15th) plasma donation. The cross-sectional survey was conducted among donors aged 18-65 (n=200). The questionnaire covered sociodemographic data, information sources, number of weekly plasma donations and motivation. Descriptive statistical analysis and repeated ANOVA ($p<0.05$) were performed using SPSS 28.0 software.

RESULTS

The RBC count (1st: 4.94 T/L; 5th: 4.77 T/L; 15th: 4.68 T/L), the WBC count (1st: 6.79 G/L; 5th: 6.61 G/L; 15th: 6.54 G/L and PLT count (1st: 199.57 G/L; 5th: 192.56 G/L; 15th: 186.15 G/L) decreased significantly ($p<0.001$), but remained within the normal range. The level of HMG of women (1: 130 G/L; 15: 127 G/L) ($p<0.001$) and men (1: 145.6 G/L; 15: 137.1 G/L) significantly decreased ($p<0.001$). Total plasma protein (1st: 7.7 G/L; 5th: 7.1 G/L; 15th: 6.7 G/L) also decreased ($p<0.001$) but remained in the normal range. The primary sources of information comprise a friend (41.5%) and the Internet (36%). The main motive is helping others (70%) and benefits (54%). The main motive for later plasma donation is more benefits (67.5%). 45.5% of respondents plan to donate plasma 3-4 times a month, 42% at most.

CONCLUSIONS

All donor parameters tested decreased during donation but remained within the no rmal range. The benefits are still a source of motivation.

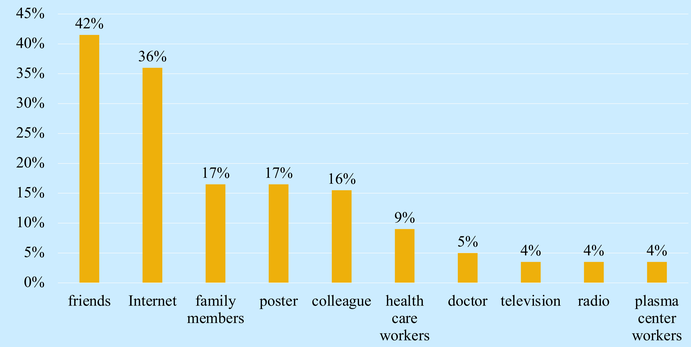

Figure 1.
Distribution of information sources about plasma donation

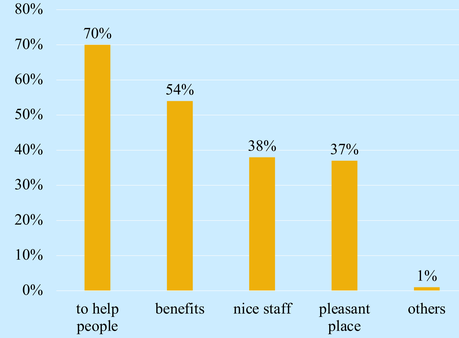

Figure 2.
Distribution of motivations for plasma donation

PARAMETERS (MEAN±STANDARD DEVIATION)			
	1. Plasma donation	5. Plasma donation	15. Palsma donation
Red blood cell	4.94±0.595	4.77±0.571	4.68±0.595***
thrombocyte	199.57±26.825	192.56±26.913	186.15±26.2***
White blood cell	6.79±1.79	6.61±1.733	6.54±1.696***
Total plasma protein	7.715±0.558	7.138±0.515	6,71±0.545***
immunglobulin G	11.04±1.798	9.807±1.333	8.80±1.132***

*** p<0.001

Table 1.
Change of laboratory parameters at 1., 5., and 15. based on the measurements of plasma donation (n=100)

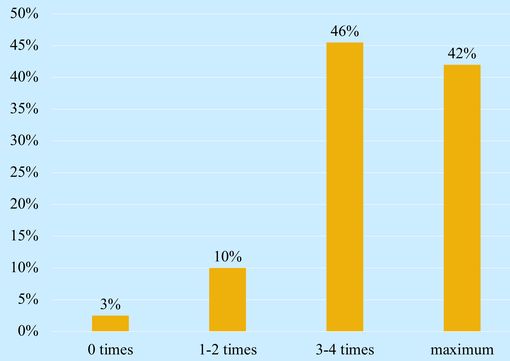

Figure 3.
Distribution of maximum number of plasma donation

PARAMETERS (MEAN±STANDARD DEVIATION)						
	1. Plasma donation		5. Plasma donation		15. Plasma donation	
	female	male	female	male	female	male
hemoglobin	130.1±5.7	145.6±8,9	128.4±4.1	141.1±9.5	127.2±4.3	137.2±9.1
p-value	p<0.001		p<0.001		p<0.001	
hematocrit	38.3±1.6	44.0±3.4	37.9±1.8	42.9±3.7	37.2±1.4	42.25±3.9
p-value	p<0.001		p<0.001		p<0.001	

Table 2.
Change and differences of laboratory parameters at 1., 5., and 15. based on the measurements of plasma donation by gender (n=100)

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