

An analysis of plasma-derived medicinal products usage in the Czech Republic

Isaic C¹, Břečťan R², Doležal T³, Lapka M⁴

¹HAE Junior; ²Rare Diseases Czech Republic; ³Value Outcomes, s.r.o.; ⁴Ústav farmakologie, 3. lékařská fakulta UK v Praze

Aim

Plasma proteins play an essential role in the treatment of various serious and life-threatening diseases. Many of them are listed in the EU Critical Medicines list. This research seeks to analyze the availability of plasma-derived medicinal products (PDMPs) and related trends in the Czech Republic over time.

Design & Methods

In 2024, the administrative claims data were extracted from healthcare insurance databases, covering the period 2012–2022. The data enabled us to combine therapeutic indications with the number of patients treated with specific PDMPs and to demonstrate changes in their usage over time. The immunoglobulin related data was also compared to third party related research.

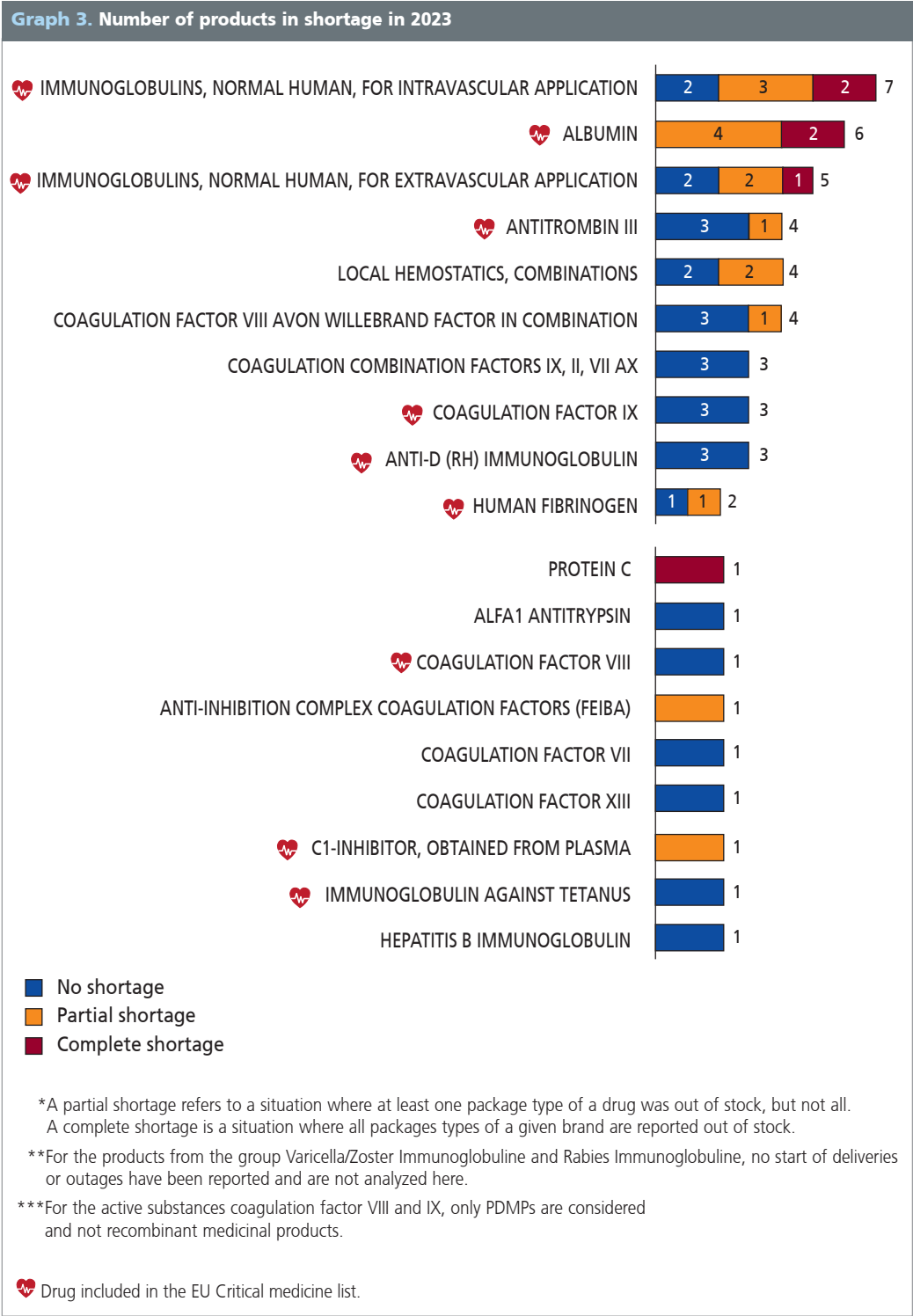
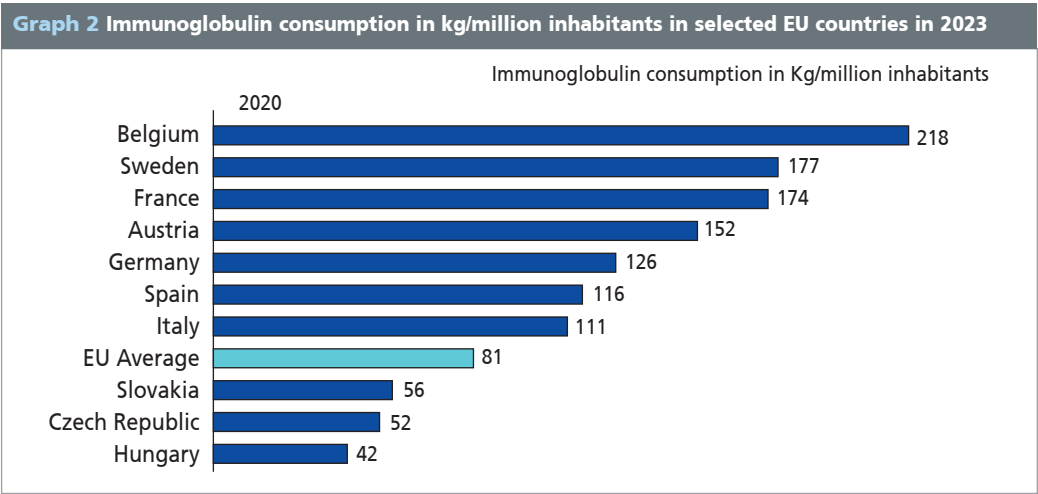
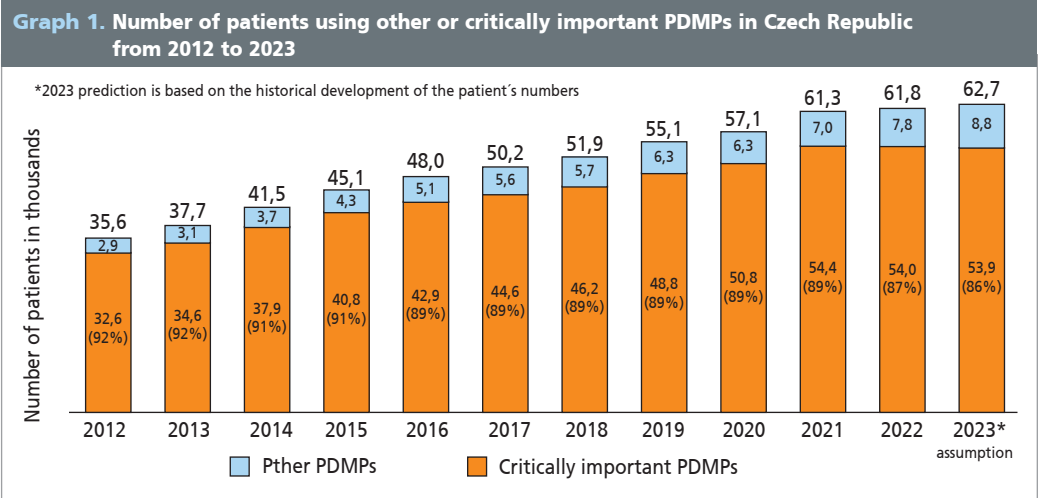


Table 1 List of active ingredients derived from plasma available in Czech market in 2022				
Drug class	Active ingredient	ATC	Centre Product Status	Number of patients in 2022
Coagulation factors	COMBINATION OF COAGULATION FACTORS IX, II, VII AX	B02BD01	NO	7 180
	HUMAN FIBRINOGEN ♥	B02BB01	NO	5 689
	COAGULATION FACTOR VIII ♥	B02BD02	NO	14*
	COAGULATION FACTOR VIII AND VON WILLEBRAND FACTOR IN COMBINATION	B02BD06	NO	320
	COAGULATION FACTOR IX ♥	B02BD04	NO	35*
	COAGULATION FACTOR VII	B02BD05	NO	23
	COAGULATION FACTOR XIII	B02BD07	NO	5
	FACTOR EIGHT INHIBITOR BYPASS ACTIVITY (FEIBA)	B02BD03	NO	13
Protease inhibitors	ANTITROMBIN III ♥	B01AB02	NO	3 068
	PLASMA-DERIVED INHIBITOR ♥	B06AC01	YES	82
	ALFA1 ANTITRYPSIN	B02AB02	YES	44
Immunoglobulins	ANTI-D (RH) IMMUNOGLOBULIN ♥	J06BB01	NO	16 861
	IMMUNOGLOBULINS, NORMAL HUMAN, FOR EXTRAVASCULAR APPLICATION ♥	J06BA01	NO	6 019
	IMMUNOGLOBULINS, NORMAL HUMAN, FOR INTRAVASCULAR ADMINISTRATION ♥	J06BA02	NO	3 717
	IMMUNOGLOBULIN AGAINST TETANUS ♥	J06BB02	NO	415
	ANTI-RABIES IMMUNOGLOBULIN ♥	J06BB05	NO	115
	HEPATITIS B IMMUNOGLOBULIN	J06BB04	NO	154
	IMMUNOGLOBULIN AGAINST VARIOUS CHICKENPOX /SHINGLES	J06BB03	NO	22
Anticoagulants	PROTEIN C	B01AD12	NO	2
	LOCAL HEMOSTATICS, COMBINATIONS	B02BC30	NO	5
Albumin	ALBUMIN ♥	B05AA01	NO	17 973

♥ Drug included in the EU Critical medicine list.

*Only PDMP are considered, not recombinant medicinal products

Results

The number of Czech patients treated with plasma proteins has nearly doubled since 2012, counting 61 756 patients in 2022, of whom 87% patients were treated with a PDMP type that was included in the EU Critical Medicines list (**Graph 1**). The estimate for 2023 forecasted continued growth, reaching nearly 63 000 patients to be treated with a PDMP type in the Czech Republic. **Table 1** provides additional information of the 21 types of PDMPs prescribed and reimbursed in 2022. Therefore, we identified 32 therapeutic indications claimed to be reimbursed by the healthcare insurance system, such as replacement therapy for immunodeficient patients (6 626 patients), immunomodulatory therapy for autoimmune disorders (3 110 patients) and various types of prevention and treatment of hemorrhage (7 590 patients).

As per **Graph 2**, the usage of immunoglobulins, which are among the main groups of PDMPs, was lower in the Czech Republic (52 kg/million per capita) in 2020 than in Western Europe and below the European average (81 kg/million per capita). This was due to limited availability and indication-based reimbursement restrictions. In 2023, there were supply shortages for 10 of the 19 types of PDMPs, with some brands being completely unavailable on the market. The most significant shortages were recorded for immunoglobulins (8 out of 12 brands) and albumin (all 6 brands), as per **Graph 3**.

Conclusion

While the need for plasma protein therapies has been gradually increasing, some shortages still occurred in the Czech Republic in the recent past. In addition, international market research also indicates that the immunoglobulin consumption in the Czech Republic was below European average in 2020. Therefore, there is a clear need from a patient perspective to continuously advocate for and enhance the adequate availability of PDMPs for Czech patients. The working group of plasma proteins users as part of the Rare Diseases Czech Republic patient organization actively works towards this goal.

References
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Contact information
Corresponding author contact: cisaic@haejunior.cz