

Why do Polish patients use vitamin drip services? Results of a preliminary cross-sectional survey

Mikołaj Kamiński¹, Matylda Kręgielska-Narożna^{1*}, Monika Soczewka^{2*}, Paweł Bogdański¹

¹ Department of the Treatment of Obesity and Metabolic Disorders, and of Clinical Dietetics, Poznań University of Medical Sciences, Poznań, Poland

² Student Scientific Club of Clinical Dietetics, Department of the Treatment of Obesity and Metabolic Disorders, and of Clinical Dietetics, Poznań University of Medical Sciences, Poznań, Poland

Introduction Parenteral administration of compounds usually labelled as dietary supplements for oral consumption is commonly known as “vitamin drips,” “vitamin cocktails,” or “vitamin injections.”¹ They are poorly investigated both in terms of efficacy and safety.^{2,3} Nevertheless, vitamin drips are gaining attention as a novel branch of alternative medicine⁴ due to marketing campaigns and promotion of these services by celebrities.^{1,5} To date, most of the reports on this emerging phenomenon were anecdotal and lacked scientific rigor.⁶

We aimed to cross-sectionally investigate the experience of individuals using parenteral supplementation services in Poland.

Methods The study’s design was approved by our university’s institutional review board (no. 227/20). Data were collected between February and May 2020.

To date, no professional term has established itself to describe vitamin drips. Here, we referred to these interventions as “parenteral supplementation.” Firstly, most of the ingredients used in intravenous blends are typical constituents of dietary supplements and their palette is not limited to vitamins. Secondly, the services promote their products as “supporting treatment.”^{1,4,6} Finally, the companies underline that parenteral intake of vitamins and macro- or micronutrients offers unique advantages over the oral form.^{4,6}

We created an original survey to investigate the experience of people who had used parental supplementation services. We decided to develop a new questionnaire tailored for this purpose because this phenomenon had not been studied using such an approach before. We assumed that the results would be preliminary, and that further surveys with more sophisticated designs

would follow. Initially, we screened 10 websites of services offering vitamin drips for various aspects that could be included in the questionnaire. The form contained questions on general characteristics, contact with medical professionals, and experience with the services. The initial version of the survey was prepared and used in Polish (Supplementary material, *File S1*); however, we also attach the English version (Supplementary material, *File S2*). The form contained mostly closed-ended questions and did not assume standardized outcome measurement. We disseminated the link to the questionnaire in Google Forms via Facebook groups related to health or complementary medicine. We used the Polish zloty (PLN) to the euro (EUR) exchange rate from June 6, 2020. The dataset will be available on Mendeley after publication.

Results We accessed a total of 70 Facebook groups, and the survey was accepted by administrators in 35 Facebook groups that include over 437 000 members. We obtained 32 answers, and of them, 17 (53.1%) were by individuals who used parenteral supplementation services in Poland. The essential results are presented in **TABLE 1**, and all details can be found in Supplementary material, *Table S1* and *S2*. The respondents tend to have bad experience with physicians. The motivations and chosen supplements varied between the participants, but parenteral vitamin C was most common with over 75% of participants reporting its use. Interestingly, one respondent admitted that he / she used drips to test them, and also admitted to being a physician who was considering preparing infusions for his / her family and relatives (Supplementary material, *Table S2*). The highest declared amount spent on parenteral supplementation was PLN 30 000 (EUR ~6579). Finally, in

Correspondence to:
Mikołaj Kamiński, MD, Department
of the Treatment of Obesity
and Metabolic Disorders, and
of Clinical Dietetics, Poznań
University of Medical Sciences,
ul. Szamarzewskiego 84,
60-569 Poznań, Poland,
phone: +48 61 854 97 42,
email: mikołaj.w.kaminski@gmail.com
Received: August 11, 2020.
Revision accepted:
September 11, 2020.
Published online: September 15, 2020.
Pol Arch Intern Med. 2020;
130 (11): 1007-1009
doi:10.20452/pamw.15602
Copyright by the Author(s). 2020

* MK-N and MS contributed equally
to this work.

TABLE 1 Results of a survey on the use of vitamin drip services

Question		Answers
General characteristics		
Female sex		10 (58.8)
Age, y, median (IQR)		39 (33–44)
Experience with medical professionals		
What is your trust in doctors?	Very trustful	3 (17.6)
	Trustful	1 (5.9)
	Neutral attitude	2 (11.8)
	Distrustful	8 (41.2)
	Very distrustful	3 (17.6)
Do you follow recommendations of a family doctor or medical specialist?	Yes	10 (58.8)
Did you experience incorrect diagnosis?	In your case	7 (41.2)
	In case of a loved one	8 (41.2)
Did you experience medical error?	In your case	8 (41.2)
	In case of a loved one	5 (29.4)
Did you experience a feeling of being ignored by a doctor?	In your case	9 (52.9)
	In case of a loved one	6 (35.3)
Did you experience bad treatment by a doctor?	In your case	10 (58.8)
	In case of a loved one	4 (23.5)
Parenteral supplementation		
Number of uses, median (IQR)		10 (2–20)
Total amount spent, PLN/EUR, median (IQR)		1000 (350–3000)/219 (77–658)
Reasons	Improve immunity	10 (58.8)
	Fatigue	8 (47.1)
	Improve physical endurance	6 (35.3)
	Detoxification	5 (29.4)
	Vitamin deficiency	5 (29.4)
	Hangover	3 (17.6)
	Malignancy	2 (11.8)
	Autoimmune disease	2 (11.8)
	Other	3 (17.6)
Ingredients used	Vitamin C	13 (76.5)
	Coenzyme Q10, glutathione, magnesium, multi-electrolyte fluid	6 (35.3)
	Hydrogen peroxide, saline, vitamin B ₁ , vitamin B ₂ , vitamin B ₆	4 (23.5)
	Dimethyl Sulfoxide, DMSO, vitamin B ₃ , vitamin B ₅ , vitamin B ₉	3 (17.6)
	Alpha-lipoic acid, ozone, solcoseryl, vitamin A, vitamin D	2 (11.8)
	EDTA, monoionic silver, vitamin B ₁₂ , vitamin E	1 (5.9)
Was the service preceded by		
Medical examination	Yes	13 (76.5)
Oral information about contraindications	Yes	14 (82.3)
Presentation of scientific evidence	Yes	9 (52.9)
Presentation of qualification of the person performing infusion	Yes	16 (94.1)
Personal assessment of the service	Very good	14 (82.3)
	Good	2 (11.8)
	Very bad	1 (5.9)
Have you been offered to give up conventional treatment (eg, prescribed by a doctor), and instead of that, use infusions/drips?	Yes	1 (5.9)

Data are presented as number (percentage) unless otherwise indicated.

Abbreviations: DMSO, dimethyl sulfoxide; EDTA, ethylenediaminetetraacetic acid

some cases, patients were not informed about the service in detail, and one respondent was persuaded to give up conventional treatment. None of the responders mentioned the use of nonintravenous supplements.

Discussion This is the very first study describing the experience of Polish individuals who used parental supplementation services. Poles consider the performance of the national healthcare system to be poor,⁷ and this ratio seems to reflect the fraction of individuals who were dissatisfied with doctors. Moreover, most of the respondents follow the recommendations of their physicians. Therefore, vitamin drips might be perceived as an addition to standard care. That hypothesis is also supported by the declared reasons for using parenteral supplementation services: most of the motivations concern general health benefits (immunity, physical endurance, fatigue, detoxification) rather than specific indications. Alternative medicine is often proposed in conditions with highly subjective symptoms.⁸ When indications and health outcomes are poorly defined, placebo effects may be more perceptible,⁸ which may result in a good subjective assessment of the intervention as declared in our survey.

Among the declared ingredients, there was dimethyl sulfoxide, which in 2019, caused the death of a 36-year-old woman who used an intravenous supplementation service,⁹ and hydrogen peroxide, which is a life-threatening substance when given intravenously.^{10,11} Moreover, there could be cases when customers are persuaded to resign from conventional treatment and purchase more alternative medicine products or procedures. Therefore, there is an emerging need for studies on parenteral supplementation services and the efficacy of current legislation.

Our results should be interpreted with caution. Despite the broad dissemination of the survey, we collected only 17 responses. This is a major limitation of the study, but the collection of more answers might be challenging. We openly admitted on Facebook groups that our study was assessed by an ethical committee, and is performed by our department. This might have discouraged some individuals, who do not trust medical professionals, from completing the questionnaire. The low response rate suggests that acquiring respondents by Facebook groups may be challenging, and that another survey strategy is needed. Therefore, we treat our paper as a preliminary study. We are working on the design of a new study, which would achieve a higher response rate. Nevertheless, we hope that our study paves the way for future investigations of Poland's parenteral supplementation services.

Conclusions Polish individuals chose a variety of ingredients, including these potentially harmful, for intravenous drips. Further studies with a higher number of responses are needed.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/paim.

ARTICLE INFORMATION

CONTRIBUTION STATEMENT MK conceived the concept of the study. MK and MS were involved in data collection. MK performed formal analysis and prepared figures and tables. MK and MKN prepared supplementary material. All authors were involved in data interpretation. MK prepared the original manuscript. All authors reviewed and approved the final version of the manuscript.

CONFLICT OF INTEREST None declared.

OPEN ACCESS This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License (CC BY-NC-SA 4.0), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material, provided the original work is properly cited, distributed under the same license, and used for noncommercial purposes only. For commercial use, please contact the journal office at pamw@mp.pl.

HOW TO CITE Kamiński M, Kęglińska-Narożna M, Soczewka M, Bogdański P. Why do Polish patients use vitamin drip services? Results of a preliminary cross-sectional survey. *Pol Arch Intern Med.* 2020; 130: 1007-1009. doi:10.20452/pamw.15602

REFERENCES

- 1 Rimmer A. Sixty seconds on... vitamin drips. *BMJ.* 2019; 366: l4596. [↗](#)
- 2 Bilg R. A Rapid Evidence Assessment on the Effectiveness of Intravenous Mega-Dose Multivitamins on Fibromyalgia, Chronic Fatigue, Cancer, and Asthma. Graduate Research [non-thesis]. The University of British Columbia; 2017. <https://open.library.ubc.ca/cIRcle/collections/graduate-research/42591/items/1.0362308>. Accessed February 25, 2020.
- 3 Gavura S. A closer look at vitamin injections. Science Based Medicine website. <https://sciencebasedmedicine.org/a-closer-look-at-vitamin-injections>. Published May 24, 2013. Accessed February 25, 2020.
- 4 Sams L. Science or not, IV "wellness" drips are booming. Financial Review website. <https://www.afr.com/companies/healthcare-and-fitness/science-or-not-iv-wellness-drips-are-booming-20190405-p51b4p>. Published April 5, 2019. Accessed February 27, 2020.
- 5 Iqbal N. Celebrities help the £500 vitamin jab go mainstream. The Guardian website. <https://www.theguardian.com/lifeandstyle/2019/mar/03/intravenous-vitamin-injection-goes-mainstream>. Published March 3, 2019. Accessed February 27, 2020.
- 6 Vitamin drips. Hit or great scam? [in Polish] Dzień Dobry TVN website. <https://dziendobry.tvn.pl/a/wlewy-witaminowe-hit-czy-wielkie-oszustwo>. Published February 2, 2019. Accessed February 25, 2020.
- 7 Solecka M. Polish people criticize healthcare. Unless they used it [in Polish]. Medycyna Praktyczna website. <https://www.mp.pl/kurier/215983,polacy-krytycznie-o-ochronie-zdrowia-chyba-ze-z-niej-korzystali>. Published September 4, 2019. Accessed October 3, 2019.
- 8 Kaptchuk T.J. The placebo effect in alternative medicine: can the performance of a healing ritual have clinical significance? *Ann Intern Med.* 2002; 136: 817. [↗](#)
- 9 Death of a 36-year-old woman in a Poznań hospital. She came from a natural medicine clinic [in Polish]. Wprost. <https://www.wprost.pl/polytyka/10185708/smierc-36-latki-w-poznanskim-szpitalu-trafila-tam-z-kliniki-medycyny-naturalnej.html>. Published January 23, 2019. Accessed June 6, 2020.
- 10 Watt BE, Proudfoot AT, Vale JA. Hydrogen peroxide poisoning. *Toxicol Rev.* 2004; 23: 51-57. [↗](#)
- 11 Lubec B, Hayn M, Denk W, Bauer G. Brain lipid peroxidation and hydroxy radical attack following the intravenous infusion of hydrogen peroxide in an infant. *Free Radic Biol Med.* 1996; 21: 219-223. [↗](#)