Summary of 2023 and the biggest challenges for the "Archives of Medical Science" on its 20th Anniversary

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We are in the year of the 20th Anniversary of the Archives of Medical Science (AMS). I remember when in 2004, just 2 years after my graduation, I approached the largest Polish publishing house – Termedia, and suggested starting/launching an international, wide-scope, open-access scientific journal. The discussions were not easy, but finally I was able to convince the Publishers to start a completely new department in the Termedia Publishing House related to the development of scientific journals, which is now one of the largest in Central and Eastern Europe with almost 60 journals.

Within this summary of the year 2023 for the journal I would like to present the parametric data, also suggesting completely new, innovative parametric indicators that hopefully inspire other Editors to present the real potential of papers published in the given year.

Let's start with the TOP 10 Most Cited Papers in 2022 in the Archives of Medical Science based on the citations from Web of Science by Clarivate and also Dimensions by Altmetric (Table I). Year 2022 obviously means that those papers (as well as those from 2021) will play the most important role in the calculations of the impact factor 2023 (IF2023) (to be released in June 2024). For these papers I would like also to suggest a new indicator called the time corrected citations index (TcCI) which also considers the time of collecting citations and, due to the frequency of publication of the journal (6 issues per year), means multipliers from 1.0 (for papers from 1/2022 issue with the largest chance to get the highest number of citations due to the longest time since the publication) through 1.2 (for 2/2022 issue), 1.4 (for 3/2022 issue), 1.6 (for 4/2022 issue), 1.8 (for 5/2022 issue) to 2.0 (for papers from 6/2022 issue). If we look at the areas and authors of the papers with the highest citations, the first place is definitely for the guidelines of the Polish scientific societies on metabolic syndrome [1], and in the top 10, we can find next 4 papers from the area of cardiovascular diseases [2-5], a paper on the role of statins in lung cancer [6], a paper presenting the potential genetic biomarkers in Alzheimer disease (AD) [7], which has been a very hot topic for several years now, two papers covering the issue of COVID-19 pandemic [8, 9], and finally a critically important paper on the health status and its socio-economic covariates in the older population in Poland based on the PolSenior2 survey [10]. I am very happy that some of those papers were prepared within my wide international research team, but obviously all the authors of the abovementioned papers deserve huge congratulations on these distinctions.



Table I. TOP 10 most cited articles published in 2022 with the potential highest impact for IF2023 calculation. Citations were based on Web of Science by Clarivate and Dimensions by Altimetric. Time-corrected citations index (TcCl) considers the time of collecting citations and, due to the frequency of publication of the journal, means multipliers from 1.0 to 2.0. Data were collected on 31 January 2024

N O	Reference	Web of Science citations number	Dimensions citations number	Time-corrected citations index (TcCI)
1	Dobrowolski P, Prejbisz A, Kuryłowicz A, Baska A, Burchardt P, Chlebus K, et al. Metabolic syndrome – a new definition and management guidelines. A joint position paper by the Polish Society of Hypertension, Polish Society for the Treatment of Obesity, Polish Lipid Association, Polish Association for Study of Liver, Polish Society of Family Medicine, Polish Society of Lifestyle Medicine, Division of Prevention and Epidemiology Polish Cardiac Society, "Club 30" Polish Cardiac Society, and Division of Metabolic and Bariatric Surgery Society of Polish Surgeons. Archives of Medical Science 2022;18(5):1133-56. https://doi.org/10.5114/aoms/152921	31	40	56/72
7	Amin F, Fathi F, Reiner Ž, Banach M, Sahebkar A. The role of statins in lung cancer. Archives of Medical Science. 2022;18(1):141-52. https://doi.org/10.5114/aoms/123225	14	19	14/19
е	Banach M, López-Sendon J L, Averna M, Cariou B, Loy M, Manvelian G, et al. Treatment adherence and effect of concurrent statin intensity on the efficacy and safety of alirocumab in a real-life setting: results from ODYSSEY APPRISE. Archives of Medical Science. 2022;18(2):285-92. https://doi.org/10.5114/aoms/143476	14	15	17/18
4	Sun C, Liu J, Duan F, Cong L, Qi X. The role of the microRNA regulatory network in Alzheimer's disease: a bioinformatics analysis. Archives of Medical Science. 2022;18(1):206-22. https://doi.org/10.5114/aoms/80619	13	18	13/18
2	Banach M, Reiner Z, Cicero AF, Sabouret P, Viigimaa M, Sahebkar A, et al. 2022: the year in cardiovascular disease – the year of upfront lipid lowering combination therapy. Archives of Medical Science. 2022;18(6):1429-34. https://doi.org/10.5114/ aoms/156147	13	14	26/28
9	Banach M, Kaźmierczak J, Mitkowski P, Wita K, Broncel M, Gąsior M, et al. Which patients at risk of cardiovascular disease might benefit the most from inclisiran? Polish experts' opinion. The compromise between EBM and possibilities in healthcare. Archives of Medical Science. 2022;18(3):569-76. https://doi.org/10.5114/aoms/147435	11	14	15/20
7	Wierucki Ł, Kujawska-Danecka H, Mossakowska M, Grodzicki T, Błędowski P, Chudek J, et al. Health status and its socio-economic covariates in the older population in Poland – the assumptions and methods of the nationwide, cross-sectional PolSenior2 survey. Archives of Medical Science. 2022;18(1):92-102. https://doi.org/10.5114/aoms.2020.100898	10	12	10/12
∞	Chiquete E, Alegre-Díaz J, Ochoa-Guzmán A, Toapanta-Yanchapaxi L N, González-Carballo C, Garcilazo-Ávila A, et al. Ethnicity and other COVID-19 death risk factors in Mexico. Archives of Medical Science. 2022;18(3):711-8. https://doi.org/10.5114/ aoms.2020.101443	6	11	13/15
6	Mazidi M, Shekoohi N, Katsiki N, Banach M, Lipid and Blood Pressur Meta-analysis Collaboration (LBPMC) Group. Omega-6 fatty acids and the risk of cardiovascular disease: insights from a systematic review and meta-analysis of randomized controlled trials and a Mendelian randomization study. Archives of Medical Science. 2022;18(2):466-79. https://doi.org/10.5114/aoms/136070	6	6	11/11
10	Ordak M. COVID-19 research: quality of biostatistics. Archives of Medical Science. 2022;18(1):257-9. https://doi.org/10.5114/ aoms/144644	8	14	8/14

The papers published in the journal in 2023 can be evaluated using different indicators, including the well-recognized *Altmetric Score*, which reflects the interest (attention) in the article via its shar-

ing on social media, blogs, but also mentions and citations in the different media sources (Table II). The highest Altmetric Score for papers published in 2023 was achieved by the paper prepared by

Table II. TOP 10 2023 articles with the highest Altimetric Score



Kamila Ryczkowska MSc on menopause and women's cardiovascular health [11] with a score of 207, which reflects the reference of the article in 24 news stories from 24 outlets, by 15 Twitter (X) users and one citation in Wikipedia. The 2nd place and silver medal happily goes to the article of my authorship, which summarized the year 2023 in the cardiovascular diseases and focused on the most recent achievements in the field, including new and prospective drugs, new data, and recommendations, with the large emphasis on the upfront lipid lowering combination therapy [12]. Our article was mentioned and discussed by 478 Twitter users. Next 8 articles from the list have Altmetric Score from 12 to 38, and they refer to the critically important issue of alcoholism [13], discussion around new effective antidiabetic drugs -SGLT2 inhibitors [14], the effective interventions on obesity [15], and related to this topic – the most common and worst monitored cardiovascular risk factor - lipid disorders, and what had the highest impact in this area in last four decades [16]. The next awarded paper referred to diet with the large emphasis on the worldwide burden attributable to high red meat diet based on the data from the Global Burden of Diseases (GBD) 1990-2019 [17]. The last 3 featured articles compared chronic obstructive pulmonary disease (COPD) and depressive disorder in terms of inflammation-related biomarkers [18], presented the real-world evidence (RWE) data on the use of icosapent ethyl in coronary diabetic patients in France [19], and summarized the recent knowledge in the non-alcoholic fatty liver disease (NAFLD; now correctly named as steatotic liver disease [SLD]), metabolic syndrome, and type 2 diabetes mellitus [20].

Another way to present the hot topic articles is using the parameters related to the number of paper's views and especially downloads (what may suggest a higher interest in the given paper), and based on this, new suggested indicators – the downloads/views (D/V) ratio (the higher the ratio, the larger interest based on the higher number of full paper downloads), and the paper recognition index (PRI), which is D/V ratio enriched with the Altmetric Score based on the following formula: (Downloads + Altmetric Score²)/Views. Articles were selected for this category by the number of downloads, and next categorized based on the PRI (Table III). Again (what makes me very pleased) the first place goes to our article that summarized the year 2023 in CVD, focusing on the lipid disorders area - with the number of downloads of almost 3000 [12], the second and third places go also to articles included in the Altmetric Score list - one by the French authors led by Drs. Bernardi and Sabouret [14], and the other on the largest achievements in lipidology in the last 40 years [16]. The state-of-the-art paper on the pathophysiology and management in hyponatremia in patients with arterial hypertension took fourth place [21]. The following fantastic articles that were often read were related to the role of exercise in the prevention of lymphoedema secondary to breast cancer [22]. in vitro/in vivo/clinical studies on the role of current herbal extracts in bone regeneration through dental implants [23], and non-invasive measurement of liver iron concentration by magnetic resonance imaging (MRI) [24]. The paper from the orthopedic area presenting the results from the randomized controlled trial on the virtual reality (VR) versus Biodex training in adolescents with chronic ankle instability [25], from the area of molecular medicine on the flow cytometric characterization of cell surface markers to differentiate between fibroblasts and mesenchymal stem cells of different origin [26], and finally a meta-analysis from the group of Prof. Adrian Hernandez, on the efficacy and safety of sacubitril/valsartan in heart failure (HF) compared to renin-angiotensin-aldosterone system (RAAS) inhibitors [27] were the last ones included in the TOP 10 Most Viewed articles.

I believe, it is also important in this 20th Anniversary Year of the journal to present also 10 papers defined as the highly cited papers in the Web of Science by Clarivate. One of them was a paper recently published in 2023 by Dr Aleksandra Klisic which aimed to evaluate the potential relationship between iron status markers and insulin resistance and showed that serum soluble transferrin receptor levels were independently associated with HOMA-IR, whereas higher serum ferritin levels together with higher retinol-binding protein-4 were related to higher HOMA-IR in adolescent girls [28]. Another highly cited paper published in 2021 – the Polish lipid guidelines [29] – is worth mentioning, especially as the authors are now working on its update. One should also mention the article published in 2017 with the highest number of citations for all AMS articles (n = 1017) and entitled "Obesity and inflammation: the linking mechanism and the complications" authored by Drs Mohammed S. Ellulu, Ismail Patimah, Huzwah Khaza'ai, Asmah Rahmat from the University Putra Malaysia, and Dr Yehia Abed from the Al Quds University of Gaza in Palestine [30]. I extend my sincere congratulations to all mentioned and awarded papers and great thanks for their large contribution to the success of the Archives of Medical Science.

Let's hope this 20th year of the journal and the forthcoming ones will be equally successful. Let me say a few words what awaits us. We would still like to increase the quality of accepted papers (the acceptance rate for 2023 was < 15%, and for original papers < 11% for 1274 papers submitted

Table III. TOP 10 most downloaded/viewed 2023 articles of the Archives of Medical Science with the number of downleads, views, the D/V ratio, and paper recognition index (PRI) (D/V ratio enriched with the Altimetric Score) (calculated for the date of 31st January 2024)

Š.	Authors, Title of the paper, published issue	Downloads/Views	D/V ratio	PRI
L1	Banach M, Surma S, Toth PP. 2023: The year in cardiovascular disease – the year of new and prospective lipid lowering therapies. Can we render dyslipidemia a rare disease by 2024? Archives of Medical Science. 2023;19(6):1602-15. https://doi.org/10.5114/aoms/174743	Downloads: 2983/Views: 7238	0.41	6.27
2	Bernardi M, Spadafora L, Galli M, Biondi-Zoccai G, Sabouret P. Should SGLT2 inhibitors be prescribed in all diabetic type 2 patients? Archives of Medical Science. 2023;19(2):528-31. https://doi.org/10.5114/aoms/160006	Downloads: 421/ Views: 1284	0.33	1.03
m	Banach M, Surma S, ILEP. A look to the past – what has had the biggest impact on lipids in the last four decades? A personal perspective. Archives of Medical Science. 2023;19(3):559-64. https://doi.org/10.5114/aoms/166256	Downloads: 424/ Views: 1206	0.35	0.68
4	Adamczak M, Surma S, Więcek A. Hyponatremia in patients with arterial hypertension: pathophysiology and management. Archives of Medical Science. 2023;19(6):1630-45. https://doi.org/10.5114/aoms/161578	Downloads: 388/ Views: 1767	0.22	0.63
2	Tendero-Ruiz L, Palomo-Carrión R, Megía-García-Carpintero Á, Pérez-Nombela S, López-Muñoz P, Bravo-Esteban E. The effect of therapeutic exercise in the prevention of lymphoedema secondary to breast cancer: a systematic review. Archives of Medical Science. 2023;19(6):1684-92. https://doi.org/10.5114/aoms.2020.101435	Downloads: 342/ Views: 845	0.40	0.40
9	Eftekhar Ashtiani R, Hadi A, Nouri F, Rahimi S, Badkoobeh A, Abbasi K, et al. The role of current herbal extracts in bone regeneration through dental implants: in vitro/in vivo/clinical studies. Archives of Medical Science. 2023;19(6):1653-61. https://doi.org/10.5114/aoms/153510	Downloads: 386/ Views: 1018	0.38	0.38
7	Alustiza JM, Castiella A, Zapata E, Urreta I, Salvador E, Emparanza JI. Non-invasive measurement of liver iron concentration by magnetic resonance imaging and its clinical usefulness. Archives of Medical Science. 2023;19(3):784-91. https://doi. org/10.5114/aoms/119118	Downloads: 331/ Views: 909	0.36	0.37
∞	Shousha T M, Abo-zaid N A, Hamada HA, Abdelhamid Abdelsamee M Y, Behiry M A. Virtual reality versus Biodex training in adolescents with chronic ankle instability: a randomized controlled trial. Archives of Medical Science. 2023;19(4):1059-68. https://doi.org/10.5114/aoms/134635	Downloads: 414/ Views: 1244	0.33	0.33
6	Sober SA, Darmani H, Alhattab D, Awidi A. Flow cytometric characterization of cell surface markers to differentiate between fibroblasts and mesenchymal stem cells of different origin. Archives of Medical Science. 2023;19(5):1487-96. https://doi.org/10.5114/aoms/131088	Downloads: 761/ Views: 2864	0.27	0.27
10	Hernandez AV, Pasupuleti V, Scarpelli N, Malespini J, Banach M, Bielecka-Dabrowa AM. Efficacy and safety of sacubitril/valsartan in heart failure compared to renin–angiotensin–aldosterone system inhibitors: a systematic review and meta-analysis of randomised controlled trials. Archives of Medical Science. 2023;19(3):565-76. https://doi.org/10.5114/aoms/159113	Downloads: 328/ Views: 1439	0.24	0.26

and only 172 accepted), to improve the review process and invite new, very experienced Section Editors (please join us if you are interested!), and in next 2 years, for the IF2025 (published in 2026) we would like to have IF of AMS > 5. Please keep your fingers crossed!

Taking this opportunity, I would like to kindly thank all Authors, Readers and especially my amazing Editors I have a great honor to collaborate with every day.

Conflict of interest

The author declares no conflict of interest.

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- 13. Ryu T, Yang K, Chung BS. Defecation alleviates hangover by terminating intestinal drinking. Arch Med Sci 2023; 19: 1909-12.
- 14. Bernardi M, Spadafora L, Galli M, Biondi-Zoccai G, Sabouret P. Should SGLT2 inhibitors be prescribed in all diabetic type 2 patients? Arch Med Sci 2023; 19: 528-31.
- 15. Hao Z, Liu K, Qi W, Zhang X, Zhou L, Chen P. Which exercise interventions are more helpful in treating primary obesity in young adults? A systematic review and Bayesian network meta-analysis. Arch Med Sci 2023; 19: 865-83.
- 16. Banach M, Surma S, ILEP. A look to the past what has had the biggest impact on lipids in the last four decades? A personal perspective. Arch Med Sci 2023; 19: 559-64.
- 17. Liu D, Shi Q, Cheng G, Huang Q, Li S. Worldwide burden attributable to diet high in red meat from 1990 to 2019. Arch Med Sci 2023: 19: 1-15.
- 18. Małujło-Balcerska E, Sipowicz K, Pietras T. Comparing chronic obstructive pulmonary disease and depressive disorder in terms of inflammation-related biomarkers. Arch Med Sci 2023; 19: 814-9.
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