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Patients who buy acetylsalicylic acid in Polish pharmacies — population characteristics and description of medical problem

Pacjenci nabywający kwas acetylosalicylowy w polskich aptekach — charakterystyka populacji, opis problemu medycznego

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Abstract

Introduction. The aim of our study was to characterize patients in Poland who buy in pharmacies over-the-counter formulations of acetylsalicylic acid (ASA) in doses recommended by cardiologists as well as to attempt a risk stratification of this population.

Material and methods. We used standardized electronic questionnaires addressed to patients coming to pharmacies. Patients were interviewed by pharmacists or pharmacy technicians.

Results. The survey included 532 patients who bought ASA drug for themselves. Most of them have not previously had any cardiovascular events, and the decision to start ASA was the result of a medical professional's recommendation. The percentage of people who were motivated by mass media advertising was much smaller, at approximately 20%.

Conclusions. It is suggested that the most important indications for use of ASA in cardiologic doses are those concerning primary prevention. This observation warrants performing further diagnostic work-up, and points out to the role of physicians and pharmacists in therapy monitoring.

Key words: acetylsalicylic acid, survey, primary prevention, secondary prevention

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Introduction

Identification of new, molecularly defined targets of acetylsalicylic acid (ASA) as well as recent population studies contributed resulted in shifting the drug from antipyretic and analgesic category to cardiologic agents. Acetylsalicylic acid causes non-selective blockage of cyclooxygenase (COX), thereby decreasing synthesis of tissue prostaglandins including prostacyclin (PGI_2), which is one of the key players of the inflammatory reaction. The agent inhibits also synthesis of thromboxane A_2 (TXA_2), the molecule which stimulates platelet aggregation and is a potent vasoconstrictor [1, 2]. This mechanism is of major importance when considering complications of ischemic heart disease. Deposition of platelet aggregates on atherosclerotic plaques may lead to thrombosis, which in turn may decrease myocardial perfusion. Enzyme inhibition by ASA is irreversible, and lasts until a whole new population of thrombocytes is generated, which takes approx. 7–10 days. Thereafter physiological generation of inflammatory markers is reinstituted [3].

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Administration of low ASA doses (i.e. between 30 mg and 150 mg) is supported by results of pharmacological studies and numerous clinical trials. These studies aimed to investigate the balance between TXA_2 action in platelets and PGI_2 effect on endothelial cells. At the same time, the studies were intended to verify the antiplatelet effect of ASA at the lowest possible therapeutic dose. The proper selection of ASA dosage permits inhibition of platelet cyclooxygenase, with a low risk of side effects, retained possibility of combining ASA with other antiplatelet agents but also may define indications for treatment [3]. It is suggested that ASA can play a major role in primary prevention, although its effects are mainly appreciated in secondary prevention (e.g. in patients who had a myocardial infarct), irrespective of the applied modality of patency restoration in the occluded coronary artery [4–8].

Despite widespread availability and increased interest in ASA effects expressed by physicians, pharmacists and patients, the population of patients taking ASA in cardiologic doses is not completely characterized, mainly due to lack of prescription requirement. It can be assumed that not only consultation by a physician or pharmacist but also a mass media play an important role in decision making, resulting in increased patient self-medication. Furthermore, there is no complete data concerning the most common indication for ASA therapy. Available data does not specify how many of the ASA taking subjects have actually undergone cardiovascular events or how many persons take ASA as means of primary prevention, indications for which are currently being restricted. Irrespective of patient classification (primary vs. secondary prevention), it is also of importance to evaluate the amount of patients on ASA therapy who undergo coagulation tests and/or peripheral blood status analysis, especially when this agent is administered together with other antiplatelet and/or anticoagulant drugs. These parameters may be of value in assessment of potential benefits and limitations of introducing antiplatelet therapy in a given patient, which in turn can optimize the whole treatment.

The aim of this study was to characterize patients buying ASA in pharmacies in Poland as well an attempt to risk-stratify this population.

Material and methods

The study was performed using a standardized questionnaire presented to pharmacy customers who bought ASA in cardiologic doses. Digital questionnaire consisted of 15 closed-ended questions, and was a part of software developed and owned by the Infomed Sp. z o.o. company, installed in 100 pharmacies throughout Poland. The interviews were performed by pharmacists and pharmacy technicians. Consent to study participation by the patient as well as agreement to fill in the questionnaire by the pharmacy personnel were voluntary, with clause of anonymity respected. Study protocol and questionnaire were approved by the Bioethical Committee of the Medical University of Warsaw. The study duration was 2 months. Table 1 contains all the questions included in the study questionnaire.

Table 1. Questions from the digital patient questionnaire

Did you but the medication for yourself/for someone else?
Did you buy it for the first time/a consecutive time?
Did you read the drug leaflet?
If buying the drug again: did you buy this it in the same pharmacy as previously/at another pharmacy?
Do you buy the drug: after having seen a media commercial/ /following someone's recommendation/having a prescription form a physician/for another reason?
Where did you encounter media commercial for the drug?
Who recommended the drug to you?
What is your sex?
What is your year of birth?
Do you have secondary education?
You bought the drug at which dose?
Have you had a cardiac infarct?
Have you had a stroke?
Have you had a cardiac infarct and a stroke?
Do you check your coagulation parameters and/or blood status?

Results

The study included 780 persons, and the target group consisted of persons buying ASA for themselves (532 persons, 68.21%). In this population there was predominance of women (296 persons, 55.64%). Mean age of the interviewed person was 62 years. Most interviewees did not have a higher education (212 persons, 39.8%), although many (232 persons, 43.61%) refused answering this question.

Vast majority of interviewees bought ASA for a consecutive time (436 persons, 81.95%), having previously read the accompanying leaflet (332 persons, 76.15%, Fig. 1). The study revealed that among all the available ASA formulations in recommended cardiologic doses, the most often bought one was that of 75 mg (428 persons, 80.45%, Fig. 2). The doses that were chosen less often were 150 and 100 mg (68 and 36 persons, 12.78% and 6.77% respectively). None of the interviewees bought ASA in the registered dose of 30, 50 or 325 mg.

When asked about the previous cardiovascular events (cardiac infarct and/or stroke, Fig. 3), almost 56% of the study subjects (296 persons) reported never having such an episode. That would mean that ASA treatment in the population of interest was aimed at primary prevention.

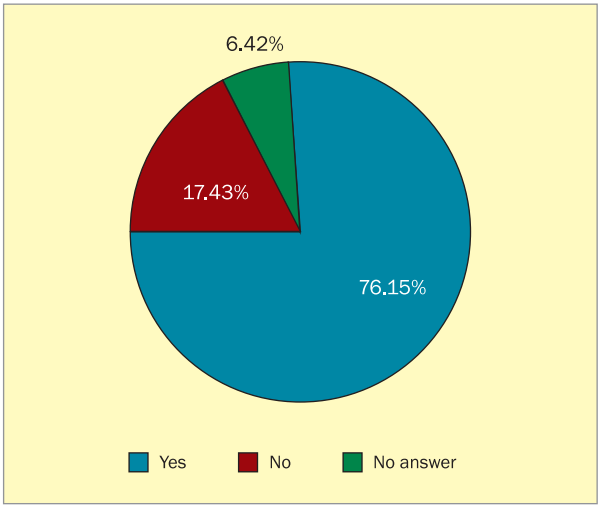

Figure 1. Interviewees' answers to the question "Did you read the drug leaflet?"

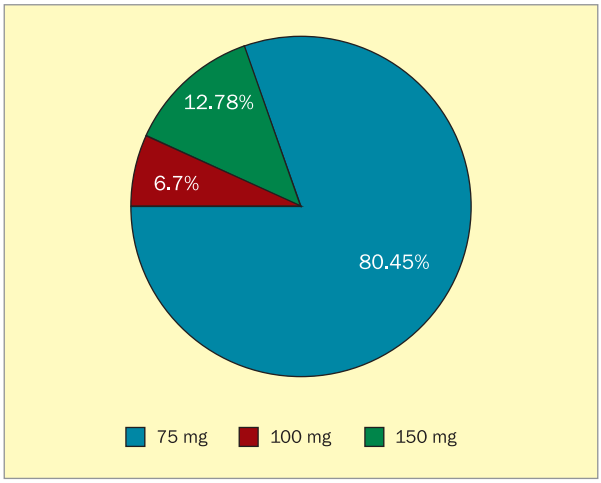

Figure 2. Doses of acetylsalicylic acid (ASA) chosen by the persons buying the drug

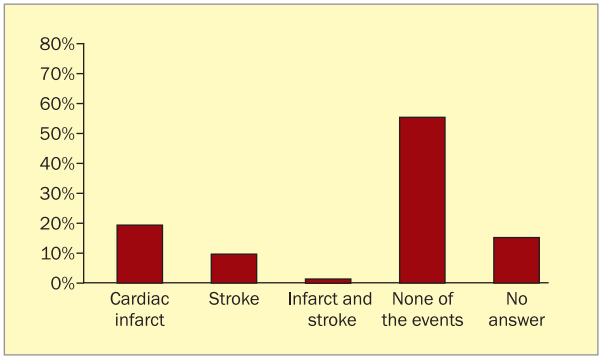

Figure 3. Interviewees' answers to the question concerning past cardiovascular events

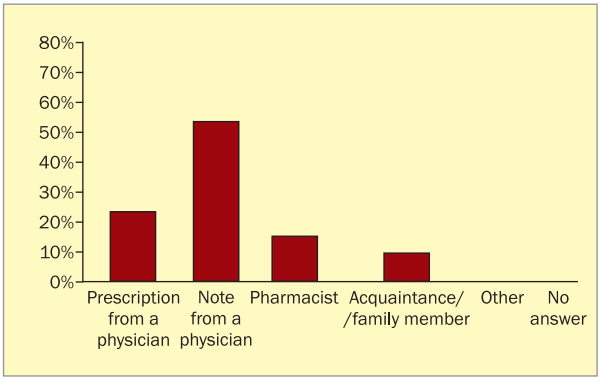

Figure 4. Interviewees answers to the question about recommendation to start ASA therapy

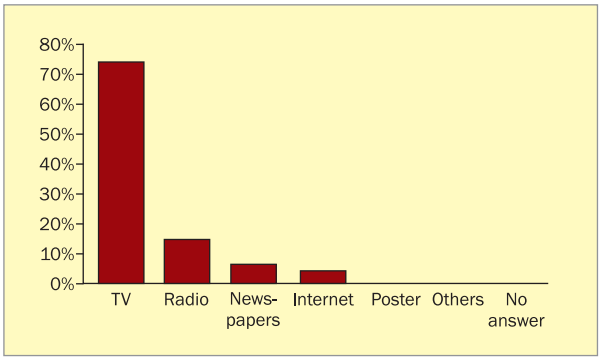

Figure 5. Interviewees' answers to the question concerning the source of commercial information on the drug; TV — televison

The results may possibly apply to all persons who take ASA containing formulations.

Most interviewees decided to buy ASA following recommendation of a medical professional (376 persons, 70.68%). There were far fewer persons responding to media commercials (19.55%, 104 persons). When asked for sources of recommendation, most persons named having received a written information on ASA from a physician during medical appointment (200 persons, 53.19%, Fig. 4). Further 84 persons (22.34%) received prescription for ASA. Ordination by a pharmacist was named by 56 persons (14.89%). Media channel that was most often named by the interviewees was TV and commercials shown therein (76 persons, 73.08%, Fig. 5), followed by radio (16 persons, 15.38%), and press and internet advertisements (8 and 4 persons respectively, 7.69% and 3.85%).

Discussion

Current recommendations for ASA therapy in cardiology include a broad spectrum of diseases, including unstab-

le angina pectoris, secondary prophylaxis of cardiac infarcts and stroke as well as follow-up therapy after revascularization procedures but ASA is currently of no importance in prophylaxis of thromboembolic disease [9]. Acetylsalicylic acid is commonly recommended in patients with coronary heart disease and diseases of peripheral vessels, in which antiplatelet agents are one of the mainstays of therapy, alongside with lifestyle modifications and evaluation of risk factors [10]. Relatively low cost of treatment, and significant and well-documented effects of antiplatelet agents in secondary prevention led to extrapolation of low dose ASA-protocols (of 35 to 150 mg) to primary prevention of various diseases. These findings were reflected in guideline documents of national and international specialist associations (American Heart Association, American Diabetes Association, American College of Cardiology) but, at the same time, were never unequivocally supported by the published data, and thus became much more restricted by the European associations (European Society of Cardiology, Polish Society of Cardiology) [11–15]. Current opinion of Food and Drug Administration (FDA) is in line with this restrictive approach, as the agency does not recommend routine low dose ASA therapy in patients who have not previously had any cardiovascular episodes. This is due to lack of definitive proof of ASA efficacy in primary prophylaxis and due to risk of hemorrhagic complications [16].

All ASA-containing formulations with cardiologic doses are registered in Poland as over the counter drugs (OTC). Many such formulations are commercially available but literature on the subject does not give a uniform or systematic insight into reasons for which Polish patients get these drugs. The presented survey clearly suggests that indications related to primary prophylaxis may be more important in this patient population than secondary prophylactic measures. This can be implied from the fact that many patients choose the ASA dose of 75 mg but also from the observation that relatively many ASA consumers have not previously had any cardiovascular episodes. These results may be in accordance with guidelines from most scientific societies, and comply with registered indications for use but are not reflecting the most recent scientific data. What should be noted, the role of ASA in primary prevention remains controversial, and requires individual risk and benefit assessment for each patient. Results presented herein, suggesting emphasis on primary prevention, can therefore raise questions as to the necessity of the ASA purchase by a certain number of interviewed persons [4, 17].

Moreover, the study emphasizes the need of regular follow-up of patients treated with acetylsalicylic acid. In the studied population, almost 40% persons admitted never having their blood status or coagulation parameters controlled (Fig. 6).

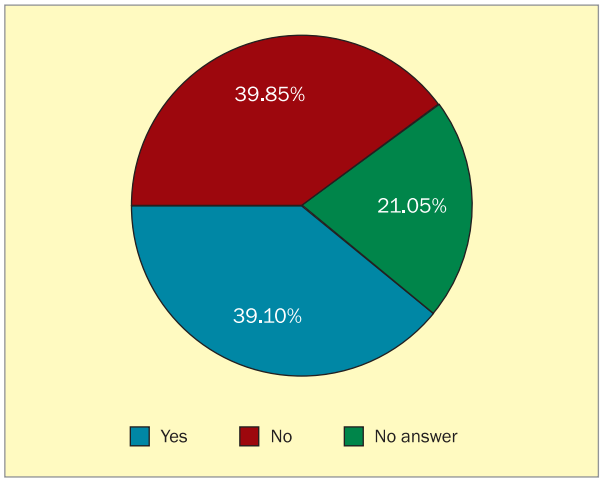

Figure 6. Interviewees' answers to the question concerning peripheral blood and/or coagulation parameters testing

These findings point out to the role of patient education, not only during medical appointments but also in pharmacies. The latter aspects may reflect the role of professional pharmaceutical service, where standardized electronic questionnaires facilitate optimization of patient interview, and thus permit achieving a greater control over safety and efficacy of pharmacological therapy.

Such tolls may present sources of recommendations, and permit verification of mass media communications concerning medical substances, which are not prescribed by physicians but still are commonly and aggressively advertised. Acetylsalicylic acid in cardiologic doses is classified as OTC, however the most important source of recommendations for therapy remains a physician. Presented study revealed that over 75% of all interviewees consulted ASA purchase with a physician, whereas only 15% were advised by a pharmacist. This does not mean that the qualified pharmacy personnel should be deprived of the capabilities of controlling ongoing pharmacological therapy. Pharmacists are the last instance in medical prescription chain, and are the only professional group that has access to all the patient's prescriptions pending under a period of time. This permits taking active steps to prevent potential drug interactions or potentially negative dose doubling of a single active substance, e.g. when ASA is prescribed by different specialists or under different commercial names (brands). It is estimated that introduction of the pharmaceutical care system, including electronic questionnaires and patient files with current laboratory test results, may enrich pharmacists' competence and permit optimization of ASA therapy.

Physician-pharmacist cooperation as to ordination of anticoagulant agents may decrease potential adverse effects of patient self-medication. Patient's choices as to pharmacological therapy may be heavily influenced by

advertising campaigns in mass media. Most persons interviewed during the presented study declared recommendation from a physician as the motive for their purchase of ASA, however a certain percentage (20%) declared being influenced by commercial advertising materials, which cannot be underestimated. The latter group should therefore be more actively taken care of by physicians, as these persons may not have access to the complete information on therapeutic purpose and safety of ASA therapy. Besides, patients influenced by advertisements when deciding to buy ASA never consult a physician first. This puts a greater responsibility on pharmacists, and warrants including a question concerning drug advertising, as in the presented study questionnaire. Such an interview may reflect on the necessity of ASA therapy but also result in advising patient to consult a physician and/or perform laboratory tests.

Conclusions

1. Indications for ASA therapy as means of primary prophylaxis of cardiovascular episodes were more commonly reported as compared to secondary prophylaxis.
2. Dominance of primary prevention-related indications makes the necessity of ASA treatment in the presented group highly debatable.
3. This finding warrants advising regular laboratory tests in the presented group.
4. Acetylsalicylic acid formulations are classified as over-the-counter drugs, however physician remains the main source of recommendations in this regard.
5. Standardized electronic questionnaires for patients as a part of professional pharmaceutical care system may be an useful educational tool, permit control of patient's laboratory test results and monitoring safety of OTC therapy, including administration of ASA in cardiologic doses.
6. Physician-pharmacist cooperation as to ordination of anticoagulant agents may decrease potential adverse effects of patient self-medication, stimulated by aggressive mass media advertising campaigns.

Conflict of interests

The authors declare no conflicts of interests.

Streszczenie

Wstęp. Celem badania była charakterystyka pacjentów nabywających w ogólnodostępnych aptekach preparaty kwasu acetylosalicylowego (ASA) rekomendowanego w dawkach kardiologicznych, a także jej powiązanie z próbą stratyfikacji grup ryzyka tych osób.

Materiał i metody. Wykorzystano wystandaryzowane ankiety w formie elektronicznej skierowane do pacjentów zgłaszających się do aptek. Wywiad przeprowadzali farmaceuci lub technicy farmaceutyczni.

Wyniki. Badanie objęło 532 pacjentów, którzy kupili preparat ASA dla siebie. Większość z nich nie przybyła wcześniej incydentów sercowo-naczyniowych, zaś decyzja o rozpoczęciu leczenia stanowiła wynik rekomendacji profesjonalisty medycznego. Odsetek osób, które kierowały się reklamą mediach, był znacznie mniejszy i kształtował się na poziomie około 20%.

Wnioski. Sugeruje się, że w kontekście stosowania preparatów ASA w dawkach kardiologicznych największe znaczenie nadal mają wskazania objęte profilaktyką pierwotną. Obserwacja ta implikuje konieczność wykonywania dodatkowych badań diagnostycznych w tej grupie pacjentów, jak również wskazuje na rolę lekarzy i farmaceutów w procesie monitorowania farmakoterapii.

Słowa kluczowe: kwas acetylosalicylowy, badanie ankietowe, prewencja pierwotna, prewencja wtórna

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Komentarz. Pacjenci nabywający kwas acetylosalicylowy w polskich aptekach — czy jest powód do niepokoju?

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Wprowadzony na rynek farmaceutyczny w 1899 roku kwas acetylosalicylowy (ASA, *acetylsalicylic acid*) jest obecnie jednym z najczęściej stosowanych leków na świecie. Popularność ASA zwiększała się stopniowo w pierwszej połowie XX wieku, między innymi za sprawą znacznej skuteczności leku w trakcie pandemii grypy „hiszpanki" w 1918 roku. Popularność ta nieco zmalała po wprowadzeniu na rynek paracetamolu (1956 r.) oraz ibuprofenu (1969 r.), jednak liczne badania kliniczne, prowadzone w latach 80. i 90. XX wieku, ugruntowały ostatecznie nową, kolejną wartość ASA jako środka hamującego agregację płytek krwi, sankcjonując jego istotne miejsce w terapii chorób układu sercowo-naczyniowego (CV, *cardiovascular*) [1]. Kwas acetylosalicylowy odgrywa obecnie niepodważalną rolę jedynie w prewencji wtórnej epizodów CV, ponieważ jego zastosowanie w prewencji pierwotnej jest znacznie słabiej udokumentowane i stanowi przedmiot wielu kontrowersji i dyskusji [2–5]. Przedefiniowanie roli i znaczenia tego leku w profilaktyce pierwotnej wynikało przede wszystkim z wąskiej granicy między korzyścią związaną ze stosowaniem ASA a ryzykiem powikłań krwotocznych. Decyzja dotycząca zastosowania ASA w prewencji pierwotnej bywa coraz trudniejsza, a jego zastosowanie w tym wskazaniu powinno być starannie wyważone. Grupa Robocza ds. Zakrzepicy Europejskiego Towarzystwa Kardiologicznego (*Working Group on Thrombosis of European Society of Cardiology*) jedynie sugeruje zastosowanie ASA w prewencji pierwotnej u tych chorych, u których ryzyko incydentu CV (zawału serca, udaru mózgu, zgonu z przyczyn CV) w perspektywie 10-letniej wynosi nie mniej niż 20%, co odpowiada 7–10-procentowemu ryzyku w skali EuroSCORE (*European System for Cardiac Operative Risk Evaluation*) [6]. Potwierdzeniem takiego stanu rzeczy może być również ostatnie stanowisko amerykańskiej Agencji ds. Żywności i Leków (FDA, *Food and Drug Administration*), która nie zaleca rutynowego stosowania ASA u chorych, którzy nie przebyli wcześniej epizodów sercowo-naczyniowych [7].

Badanie mgr. farm. Michała T. Pstrągowskiego, dr hab. n. med. Magdaleny Bujalskiej-Zadrożny oraz prof. dr. hab. n. med. Krzysztofa J. Filipiaka stanowi niezwykle interesującą obserwację dotyczącą charakterystyki polskich pacjentów

nabywających w aptekach ASA w rekomendowanych dawkach kardiologicznych. Szczegółowa analiza badania wykazała, że najczęściej stosowaną dawką ASA jest 75 mg. Niepokoi fakt, że aż 56% ankietowanych osób przyjmowało ten lek w prewencji pierwotnej, w której stosowanie go (jak wyżej podkreślono) jest obecnie kontrowersyjne i wymaga indywidualnego oszacowania potencjalnych korzyści i działań niepożądanych. Cieszy sytuacja, że prawie 71% ankietowanych kupiło leki w wyniku rekomendacji profesjonalisty medycznego, a jedynie 20% kierowało się reklamą w środkach masowego przekazu. Wyniki przedstawione w opracowaniu wyraźnie sugerują, że wskazania do stosowania ASA w zakresie profilaktyki pierwotnej mogą przewyższać te charakterystyczne dla prewencji wtórnej, co może rodzić wiele pytań i wątpliwości dotyczących zasadności stosowania ASA u części nabywających je osób. Bardzo dobrym pomysłem zasugerowanym przez autorów artykułu jest propozycja wprowadzenia modelu opieki farmaceutycznej opartej na wykorzystaniu elektronicznych kwestionariuszy i kart pacjenta, co może wpłynąć na szybkie wdrożenie działań prewencyjnych wobec potencjalnych interakcji lekowych lub negatywnego dublowania tej samej substancji czynnej ordynowanej przez kilku lekarzy. Farmaceuta może pełnić również niezwykle istotną rolę w zalecaniu ASA, ograniczając negatywne konsekwencje powszechnego „samoleczenia" związanego głównie z nachalną reklamą. Przedstawiony artykuł stanowi bardzo ważny „głos" dotyczący stosowania ASA przez polskich pacjentów, wnosząc wiele istotnych informacji, które powinny mieć w przyszłości przełożenie na codzienną praktykę kliniczną.

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