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ANALYSIS OF COMPLIANCE TO THERAPY OF PATIENTS WITH BRONCHIAL ASTHMA

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Abstract
: In this article, an analysis is conducted on the treatment and treatment regimen of patients with bronchial asthma, utilizing scientific sources. The analysis examines the factors that prevent patients from adhering to the treatment and regimen, as well as the reasons for their poor adherence. The results of such analyses have been generalized in various countries around the world.

Keywords: Bronchial asthma, doctor's recommendation, adherence to therapy, ICS, questionnaires, surveys and interviews, correct use of inhalers.

Introduction

Bronchial asthma (BA) is a heterogeneous disease characterized by episodic airflow obstruction, wheezing, coughing, and chest tightness with variable timing and intensity. Most BA patients respond well to conventional therapy and achieve disease control. However, a significant portion of patients (20-30%) have challenging AD phenotypes (severe atopic BA, BA with exacerbations, cough variant BA, early-onset BA, BA with persistent bronchial obstruction) and may require alternative therapies. These patients often experience frequent exacerbations and require frequent medical visits [1].

Bronchial asthma (BA) remains a global public health issue, affecting not only all age groups but also being characterized by its increasing prevalence in under-resourced countries. BA not only imposes significant financial burden for the treatment and management of patients but also contributes to increased morbidity and mortality, particularly among young individuals [4; 27; 28; 29; 30; 31].

Bronchial asthma (BA) causes distress to approximately 358 million people worldwide. Despite various reports on the prevalence of asthma in different populations, the lack of a precise and universally accepted definition of asthma hampers reliable assessment of asthma prevalence across different regions of the world. Additionally, relying on standardized methods for evaluating asthma symptoms, the global prevalence of asthma ranges from 1% to 22% of the population in various countries (2). According to estimates by the World Health Organization and other related sources, in 2018, there were over 300 million individuals suffering from bronchial asthma worldwide (ranging from 1% to 18% of the population in different countries). Furthermore, asthma is more common in children of school age, occurring twice as frequently as in adults (with half of the cases developing by the age of 5-10) [6; 29; 32; 33; 34; 35].

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When differentiating by age, the frequency of BA in children aged 1-2 is 0.12%, from 2 to 3 years it is 0.34%, from 3 to 7 years it is 0.5%, and from 7 to 15 years it is 0.31%, indicating that the highest degree of occurrence is observed in school-age children [7; 8].

Typically, bronchodilators (beta-2-agonists, anticholinergics, and methylxanthines), leukotriene antagonists, mast cell stabilizers, corticosteroids (inhaled and systemic), and monoclonal antibodies against IgE are used for the treatment of bronchial asthma [3; 5].

Adherence to therapy refers to the degree of compliance with treatment guidelines by patients, while non-adherence leads to treatment failure. Non-adherence can involve non-acceptance of medications based on prescriptions, discontinuation of medications before the prescribed duration, or the use of alternative treatments. Moreover, therapy can be intentionally or unintentionally discontinued or interrupted. Non-adherence to therapy is one of the main challenges in providing effective medical care worldwide. It is particularly pronounced in developing countries, where non-adherence affects approximately 50% of patients enrolled in treatment programs for chronic conditions such as asthma, diabetes, and hypertension. Non-adherence to the treatment regimen for bronchial asthma arises due to the severity of the socio-economic situation, poor communication between the doctor and the patient, issues related to the use of inhalation devices, complexity of the treatment regimen, financial constraints, self-medication, psychological factors, and prioritization of other illnesses over short-term symptom relief [10; 11; 12; 13; 36; 37; 38; 39].

One of the important challenges in this field is the low adherence of patients to treatment, which results in inadequate control of the disease and serious consequences (16-18). An important point is the choice of inhalation device, taking into account the individual's physical capabilities. Currently, in medical practice, the term "adherence to therapy" is defined by several similar definitions: "measurement of the patient's compliance with the recommended treatment"; "measurement of the patient's behavior (medication and lifestyle changes) consistent with the prescribed treatment".

DISCUSSIONS AND RESULTS

In a study evaluating the adherence of asthma patients to treatment and physician recommendations, conducted among the general population (n = 32,172) with an average age of 15.0 ± 19.7% patients, it was found that the frequency of using short-acting beta-agonists and inhaled corticosteroids was low [15].

A.C. Murphy et al. confirm the adherence to inhaled corticosteroid therapy in a clinic specializing in "difficult-to-treat" asthma among 115 patients. Suboptimal adherence (taking 80% of prescribed doses) was found in 65.2% of the overall population. Furthermore, it was found that patients with adherence rates above 80% had higher forced expiratory volume in one second (FEV1) and lower eosinophil percentages in sputum compared to patients with lower adherence rates [21].

The results of N.M. Nenasheva's research showed that the single mode of using IGKS was accompanied by a 20% increase in compliance, regardless of age, gender, race and weight of patients. Over the course of the study, 107 patients changed ICS regimens, including 62 patients who switched from single ICS to double or more, and adherence decreased from 63.7% to 47.8%, while 44 patients underwent secondary and single ICS. greater use and adherence to single-dose NSAIDs increased from 8.1 to 74.4%. [14]

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In the examination of Tejus outpatient conditions by Sharmila Sinha, the majority of patients supported the therapy. Only 11 patients did not respond to the requirements, of whom 7 were male (accounting for 11.92% of all male participants in the study) and 4 were female (accounting for 10.52% of all female participants). The differences in adherence rates between males and females were similar. The main reasons for non-adherence to the recommended therapy, according to surveys and interviews, were forgetfulness and difficulties in correctly using medications, particularly inhalers [9].

Apriori, researchers defined "good" adherence as using prescribed doses >80%, "fair" adherence as 60-79%, and "poor" adherence as <60%. The study confirmed suboptimal adherence in children with asthma since good adherence was observed in only 42% of the population, with the rest being non-adherent. Furthermore, there were no clinical parameters that distinguished between those who adhered well to therapy and those who did not, which made it challenging to implement such behavior in clinical practice. Similar to this study, as observed in 58% of cases, all families underestimated their adherence to the prescribed treatment methods compared to objective monitoring and measurements [19].

L.K. Williams et al. consider that variability can influence the efficacy of treatment in asthma patients. In their study, the initial adherence rate was found to be 26%. Interestingly, adherence was found to be better before or after periods of exacerbation of the disease. Moreover, a higher level of adherence was associated with a lower frequency of asthma exacerbations: a 25% increase in adherence was associated with an 11% decrease in the frequency of exacerbations. Additionally, 24% of patients deviated from the optimal regimen of the main therapy [20].

Abdullah H.K. and others. According to the results of the study, 42.2% of 110 patients had high, 22.9% average, and 34.9% low level of treatment adherence. There was no association between demographics and treatment adherence in asthma patients. However, good adherence was common among asthmatics who used a twice-daily inhaler, took medication starting at 5–20 minutes, used aerosolizers and turbohalers, and used budesonide and budesonide/formoterol [22].

In the study conducted by Deepak Aggarva et al., data adherence was reported to be self-reported in 78 patients (75.7%) and objectively measured in 56 patients (72.7%). Objective monitoring of treatment adherence is considered more important than self-assessment for evaluating adherence to inhaled corticosteroids in asthma, according to Indian researchers [23].

In another study by Nor Azila Mohd Isa et al., for example, it was found that among patients with poorly controlled asthma, a majority (56%) forgot to take multiple doses or stopped treatment (39%), compared to those with well-controlled asthma (44% and 27%, respectively). Only less than 50% of patients attending a primary care clinic for asthma management in Malaysia had good control, while poor adherence to the treatment regimen was common. The researchers concluded that Malaysian patients, especially those with severe asthma, need to make more efforts to improve asthma control [24].

In the study conducted by Jian Vang et al., it was found that 32% of patients adhered well to treatment, while 68% of patients poorly adhered to their breathing therapy due to various reasons. Further analysis indicated that lack of understanding of asthma management and treatment, poor self-monitoring, financial burden, fear of adverse reactions, and possible side effects were

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significant independent risk factors for poor adherence to inhaled corticosteroids in asthma patients [25].

In the study by Hailu Chare Koira and Tamirat Chinasho, out of the 106 participants, 62 (59%) were males, and the majority of respondents (36%) fell in the age range of 36-45 years. Non-adherence to treatment was identified in 139 (59%) patients with asthma. The most common factors influencing treatment non-adherence were forgetting to take medications (23.5%) and being engaged in other activities (17%). The main reasons for missing doses were forgetfulness, lack of clear information about the medication, and being occupied with other activities [26].

Strelova D.A. and Poletaeva N.B. conducted a study analyzing the results of a women's questionnaire, where the indicator of "adherence to drug therapy" was found to be 66.6% (51.0; 78.3), which corresponded to the average compliance rate. However, the group of men showed a lower adherence rate of 39.6% (35.5; 48.5) ($p < 0.001$), indicating a significant difference [40].

In the study by Leonteva N.M. et al., it was observed that 92% of young patients with severe asthma had poor adherence to treatment. This suggests that issues related to the development of new therapeutic approaches may contribute to better adherence among patients, which remains a relevant topic in current research [41].

According to the information provided by E.A. Sobko et al., out of the 24 patients who were fully adherent (60 ± 7.7%), 11 individuals had partial adherence (27.5 ± 7.1%), and 5 patients had non-adherence, accounting for 12.5 ± 5.2%. No correlation was found between adherence and healthcare provider module, as all 40 patients scored 4 points (100%). Partial adherence was predominantly attributed to forgetfulness in using their inhalers (4 individuals, 36.4 ± 14.1%), voluntarily discontinuing inhaler use despite perceiving its benefits (5 individuals, 45.5 ± 15.0%), and fear of adverse effects (2 individuals, 18.2 ± 11.6%) [42].

CONCLUSION:

According to the findings of the study, the average adherence to the treatment prescribed by healthcare professionals in patients with bronchial asthma was 41.33%. The main reasons identified for non-adherence to the prescribed therapy were forgetfulness, lack of sufficient knowledge about medications, being occupied with other tasks, financial burden, fear of adverse effects, patient's negligence, and difficulties in correctly using inhalers that are administered through the respiratory route.

REFERENCES

1. Global Strategy for Asthma Management and Prevention/ Revized 2017 // www.ginasthma.com
2. Globalnaya Initsiativa po Bronxialnoy Astme (GINA) 2020 Online Appendix/elektronnoy resurs/url: https:/ginasthma.org
3. Kim X. Mazza Dj. Astma: Allergy Asthma Clin Immunol 2011; 7 prilojenie 1 S2
4. Globalnaya Initsiativa po Bronxialnoy Astme (GINA) 2019
5. So JY, Mamary AJ, Shenoy K. Diagnostika I lechenie. Eue Med J 2018. 3 111-21

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

6. Avdeev S.N., Nenasheva N.M., Judenkov K.V., Petrakovskaya V.A., Izyumova G.V. Rasprostranennost, zabolevaemost, fenotipi i drugie xarakteristiki tyajeloy bronxialnoy astmi v Rossiyskoy Federatsii. Pulmonologiya. 2018; 28(3): 341-358.
7. Fedorov I.A., Ribakova O.G, Stepanov O.G., Diagnostika bronxialnoy astmu detey, perenesshiz epizodi ostogo obstruktivnogo bronxita v doshkolnom vozraste, po rezultatam desyatiletnego nablyudeniya//Chelovek. Sport. Meditsina – 2017. – T. 17, №1. – S28-35.
8. Huang j., Huang D.M., Xiao X.X Epidemiological survey of asthma among children aged 0-14 years in 2010 in urban Zhongshan, China // Zhongguo Dang Dai er Ke Za Zhi. – 2015. – Vol. 17, №2 – P. 149-154
9. SHarmila Sinxa, A Tedju «Soblyudenie rejima terapii u vzroslix patsientov s bronxialnoy astmoy. 2019-g S 59-62
10. Djimmi B., Xose Dj. Priverjennost patsienta lecheniyu: meri v povsednevnoy praktike. Oman Med J 2011; 26: 155-9
11. Instrument vremenno priverjennosti k lecheniyu: uluchenie rezultatov dlya zdorovya. Amerikanskiy kolledj profilakticheskiy meditsini. Dostupno po adresu: http//www.acpm.org/ MedAdherTT_ClinRef.
12. Priverjennost k dolgosrochnim metodom lecheniya: dokazatelstva dlya deystviy (PDF) Jeneva: Vsemirnaya organizatsiya zdravooxraneniya; 2003g

Dostupno po adresu: http//www.who.int/cht/knowledge/publications/adherence_full_report.pdf.

13. Kishan Dj., Garg K. Vliyanie sanitarnogo prosvesheniya na kompleantnost pri astme. J Indian Med Assos 2012; 110: 700. 702-5
14. N.M.Nenasheva Priverjennost lecheniyu bolnix bronxialnoy astmoy I vozmojnie strategii ee povisheniya. // Prakticheskaya pulmonologiya. – 2014. - №4 – S 2-9
15. Makhinova T. et al. // J. Manag. Care Spec. Pharm. 2015. V. 21. P.1124.
16. Globalnaya strategiya lecheniya I profilaktiki bronxialnoy astmi (peresmotr 2014 g.) / Per. s angl. Pod red. A.S. Belevskogo. –M.: Rossiyskoe respiratonoe obshestvo;
17. Burlachuk V.T., Olisheva I.A. Budnevskiy A.V. Sovremennie vozmojnosti povisheniya urovnya kontrolya i kachestva jizni bolnix bronxialnoy astmoy // Prikladnie informatsionnie aspekti meditsini. 0 2013. – T. 16. №2 – S 31-36.
18. Budnevskiy A.V Optimizatsiya lecheniya bronxialnoy astmoy: rol kompyuternogo registra // Molodejniy innovachionniy vestnik. – 2012. – T. 1. - №1 – S -. 48-50.
19. Vanessa M. Makdonald, Djanel York Priverjennost lecheniyu pri tyajeloy astme: vremiya ispravit. Evropeyskiy respiratorniy jurnal 2017 50
20. Williams L.K. et al. // Allergy clin. Immunol. 2011. V. 128. №6 P. 1185.
21. Murphy A.C. et al. // Torax. 2012. V. 67. № 8.P. 751
22. Abdulla X. K.Ali, Esraa Amin, Kamal Atta I Xaled Fauzi Alxayat. Faktori, svyazannie s lekarstvennimi preparatami, vlyayushie na priverjennost lecheniyu u patsientov s egipetskoy astmoy Egipetskiy jurnal bronxologii obyom 14, Nomer statii: 35 (2020)
23. Deepak Aggarwal, Manisha Bhardwaj, Bhavneet Singh, AK Janmeja Faktori, opredelyayushie priverjennost. Ingalyatsionnie kortikosteroidi v bronxax. Bolnie astmoy, poluchayushie tretichnuyu pomosh. ЬBolnitsa v Indii. Journal of Clinical and Diagnostic Research. 2017 Dec, Vol-11(12): OC14-OC18

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

24. Nor Azila Moxd Isa, Chang Li Cheng, Nazrila Xayrizan Nasir, Viknesh Naydu, Vishal Radja Gopal. Kontrol astmi i soblyudenie rejima lecheniya astmi v pervichnaya medico-sanitarnaya pomosh: rezultati perspektivnix, mnogotsentrovix, neinterventsionnaya nablyudatelnaya kogorta ASCOPE uchitsya v Malayzii. Med J Malaysia Vol 75 No 4 July 2020
25. Thzyan Van, Tsuy Chjay, Tsintin Van, Venxua Shi, Vey Fen, Sin Yan, Tsyantsyan Chan, Sinmin Se, Shaotszyun Li, Mansyan Li, «Determinanti priverjennosti terapii IGKS u bolnix astmoy» Amerikanskiy jurnal upravlyaemoy pomoshi, fevral 2021 g. , tom 27 , vipusk 2
26. Xaylu Chare Koyra i Tamirat Chinasho «Priverjennost k lecheniyu i faktori, vlyayushie na vzroslix patsientov s astmoy v xristianskoy bolnitse obshego prifilya Soddo, Yujnaya Efiopya: Perekrestnoe issledovanie» Int J Respir Pulm Med 2019, 6:121
27. Globalnie otsenki sostoyaniya zdorovya 2016 g.: Bremya bolezney po prichinam, vozrastu, polu, stranam i regionam, 2000-2016 gg. Jeneva, Vsemirnaya organizatsiya organizatsiya zdravooxraneniya; 2018.
28. Natsionalnoe sobesedovanie po voprosom zdorovya. (2018) elektronnaya kniga Tsentri po kontrolyu i profilaktike zabolevaniy, Natsionalniy tsentr statistiki zdravooxraneniya. Dostupno po adresu: https://ftp.cdc.gov/pum/Healt Statstics/ NCHS/ NHIS/ SHS/ 2015 SHS Table A-2.pdf
29. CDC.gov. (2018) CDC – Astma – Samie poslednie dannie ob astme (onlayn) dostupno po adresu: https://www.cdc.gov//asthma/most.resentdata.htm
30. Sarah Rnfaton, Asnhma deats have increased by a third a decade as hot summers, air pollution and lack of care blamed. The Thelegraph. 2019 y.
31. Atsjournals.org. (2018). Tursinbek Nurmagametov, Robin Lushaxara i Paul Garbe. Ekonomicheskie bremya astmi v SShA, 2008-2013 gg. / Annali Amerikanskogo torakalnogo obshestva / Stati v presse.
32. Mohsen Yaghoubi, Amin Adibi, Abdollah Safari, J. Mark Fitz Gerald, and, for the Canadian Respiratory Research Network 2019 Nov 1; 200(9) 1102-1112
33. Freytin M.B. Geneticheskie osnovi podtverjennosti k bronxialnoy astme /pod red. A.B.Maslennikova. – Novosibirsk, 2001. – S. 130-141.
34. Cookson W.A. new gene for asthma: would you ADAM and Eve in.
35. Pulmonologiya. Natsionalnoe rukovodstvo. Kratkoe izdanie. Pod red A.G.Chuchalina – M.: GEOTAR-Media. 2014. – S 312-313.
36. Gupta D., Aggarwal A.N., Subalaximi M.V., Jindal S.K. Assessing severity of asthma: spirometric correlates with visual analogue scale (VAS). Indian J. Chest Dis Allied Sci 2000; 42:95-100.
37. Bousquet J., Knani J., Dhivert H., Richard A., Chicoye A., Ware JE Jr., Michel F.B. Quality of life in asthma. I. Internal consistency and validity of the SF-36 questionnaire // Am. J. Respir. Crit. Care Med. - 1994. - Vol. 149, © 2, Pt 1. - P. 371-375.
38. Stewart A.L., Hays R.D., Ware JE Jr. The MOS short-form general health survey. Reliability and validity in a patient population // Med. Care. - 1988. - Vol. 26, © 7. - P. 724-735.
39. Chuchalin A.G., Belevskiy A.S., Smolenov I.V., Smirnov N.A., Alekseeva Ya.G. Kachestvo jizni bolnix bronxialnoy astmoy v Rossii: resultati mnogotsentrovogo populyatsionnogo issledovaniya.// «Pulmonologiya» 2003, №5.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

40. Strelova D.A., Poletaeva N.B. Priverjennost k lecheniyu bolni[bronxialnoy astmoy molodogo vozrasta v zavisimosti ot pola. V Mejdunarodnaya (75 Vserossiyskaya) nauchno-prakticheskaya konferentsiya «Aktualnie voprosi sovremennoy meditsinskoy nauki i zdravooxraneniya». Ekaterinburg, Rossiyskaya Federatsiya
41. Leonteva N.M., Demko I.V., Sobko E.A., Ishenko O.P., Uroven kontrolya bronxialnoy astmi i priverjennost terapii u patsientov molodogo vozrasta. Originalnaya statya opublikovana na sayte RMJ «Meditsinskoe obrazovanie» №4 ot 16.09.2020 S 180-185
42. E.A.Sobko, I.V.Demko, A.Yu.Kraposhina, S.A.Egorov, O.P.Ishenko, I.A.Soloveva, N.V.Gordeeva, D.N.Okulova, N.S.Smolnikov, A.S.Deyxina, A.V.Yankova. “Kachestvo jizni i priverjennost k terapii pri bronxialnoy astme tyajelogo techeniya» Byulleten fiziologii i patologii dixaniya, Vipusk 74, 2019.

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