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Knowledge and Attitude of Medical Resident Doctors Toward Antihistamines

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Abstract

Background:

Allergic rhinitis and urticaria are chronic persistent allergic conditions that need proper management as they significantly reduce quality of life measures. Of the many pharmacological options of allergic rhinitis and urticaria, second-generation antihistamines are the mainstay of therapy.

Aims:

This review focuses on the knowledge of medical residents toward prescribing antihistamines, according to the new ARIA and GA2LEN guidelines for allergic rhinitis and urticaria, attempting to find the cause of less prescription of newer second-generation antihistamines by finding out the knowledge and attitude of the doctors prescribing them to the patients.

Materials and Methods:

The study was carried out among resident doctors at a tertiary care teaching hospital. Primary data from 100 resident doctors, who gave their informed consent, was collected. A prevalidated questionnaire regarding knowledge, attitude and prescribing practice of antihistamines was filled up. The data was then analyzed with suitable statistical tests. Every question was first validated using the Chi-square test, and significance was below 10% hence proving validity of the questions.

Results:

Out of the doctors surveyed, 82% of doctors said they prescribed second-generation antihistamines, while 18% still prescribed first-generation antihistamines. Out of the 82% that prescribed second-generation antihistamines, 8.9% also prescribed first-generation antihistamines as well. 23% of doctors surveyed had heard about the ARIA and GAL2EN guidelines and their recommendations for prescribing second-generation antihistamines over the older first-generation antihistamines, while 77% of them had not heard of these position papers.

Conclusion:

First-generation or classic antihistamines are still overused due to the lack of knowledge of various guidelines that have been published. The main reason for not prescribing the second-generation antihistamines was due to the increased cost per tablet compared to the more economical first-generation antihistamines.

Keywords: Allergic rhinitis, doctors, sedating antihistamines, urticaria

What was known?

Second generation antihistamines are to be prescribed over the older first generation antihistamines.

Introduction

H1-antihistamines, the mainstay of treatment for urticaria, were developed from anticholinergic drugs more than 70 years ago. They act as inverse agonists rather than antagonists of histamine H1-receptors that are members of the G-protein family.[1]

H1-antihistamines are classified as older “first generation” and newer “second generation.”

First-generation H1-antihistamines have poor receptor H1-receptor selectivity and cross blood–brain barrier. They have a lot of adverse events such as anti-muscarinic, anti- α -adrenergic, anti-serotonin, and sedative effects.[2] In contrast, second-generation H1-antihistamines were highly selective for the histamine H1-receptor, do not cross the blood–brain barrier, and have minimal adverse events. The risks of first-generation H1-antihistamines have been clearly underestimated, particularly when purchased as nonprescribed over the counter medications by public.[3]

Patients, clinicians, and other health care professionals are confronted with various treatment choices for the management of allergic rhinitis and urticaria. This contributes to considerable variation in clinical practice, and worldwide, patients, clinicians, and other health care professionals are faced with uncertainty about the relative merits and downsides of the various treatment options available.[4]

The latest EAACI/GA2 LEN/EDF/WAO guidelines for the management of urticaria recommend that the first-line treatment for urticaria should be second-generation, nonsedating H1-antihistamines. It states, “In patients with urticaria and no special indication, we recommend against the routine use of old-sedating first-generation antihistamines (strong recommendation, high-quality evidence).”[5]

The usage of sedating antihistamines by sufferers of allergies remains prevalent, and doctors continue to prescribe these older generation antihistamines with great incidence. Cautionary statements warning of possible sedative effects and the need for restraint when driving or operating machinery, which are required for sedating antihistamines, don’t appear to be having much impact.

A study of knowledge, attitude and practice is the most important tool to assess the benefits and voids of a subject in the community, so that effective steps can be taken in that direction to improve the outcome. Resident doctors at tertiary care teaching hospitals are primarily involved in patient management, so their awareness about prescribing medicines is of prime importance for the treatment of patients. This review focuses on the knowledge of medical residents toward prescribing antihistamines, according to the new ARIA[4] and GA2LEN[5] guidelines for allergic rhinitis and urticaria, respectively. There is no comprehensive evidence from India pointing to the cause of continual prescription of first-generation antihistamines. This review attempts to find the cause of less prescription of newer second-generation antihistamines by finding out the knowledge and attitude of the doctors prescribing them to the patients.

Methods

The study was carried out among resident doctors working at Padmashree Dr. D Y Patil Hospital, Navi Mumbai, a tertiary care teaching hospital. Primary data from 100 resident doctors from the departments of medicine, obstetrics and gynecology, surgery, pediatrics, skin, ENT and psychiatry, who gave their informed consent, was collected. A prevalidated questionnaire [Illustration 1] regarding knowledge, attitude and prescribing practice of antihistamines was filled up. The data was then analyzed with suitable statistical tests.

Every question was first validated using the Chi-square test, and significance was below 10% hence proving validity of the questions.

The questionnaire consisted of questions pertaining to the antihistamine prescription habits of the doctors for urticaria and allergic rhinitis; the side effects of first-generation antihistamines and their importance to prescription in children, elderly, pregnancy and warnings given to patients pertaining driving, other side effects like drowsiness and disorientation were also asked on a question; knowledge of guidelines of GA2LEN and ARIA pertaining to prescription of antihistamines, and the reasons for not prescribing second-generation antihistamines.

A total of nine questions were included with eight questions having a dichotomous scale and one question with multiple-choice answers containing three options. Responses were analyzed using SPSS software.

Results

Within the selected practices, a total of 100 questionnaires were completely filled out and answered by the resident doctors. The presence or lack of interest of particular department made no significant difference to the responses to subsequent questions.

[Table 1](#) shows that 82% of doctors said they prescribed second-generation antihistamines, while 18% still prescribed first-generation antihistamines. Out of the 82% that prescribed second-generation antihistamines, 8.9% also prescribed first-generation antihistamines as well.

79% of doctors surveyed thought the side effects of first-generation antihistamines hampered daily activities of patients. 73% said they advised patients to not consume alcohol or drive while taking antihistamines (especially if first-generation antihistamines were prescribed.)

A sizeable proportion of doctors surveyed, 77% said they prescribe different antihistamines based on patient's occupation, pregnancy and age of the patients.

78.3% of follow-up patients complained of difficulty staying awake, sedation or feeling disoriented after taking prescribed first-generation antihistamines.

[Table 2](#) shows only 23% of doctors surveyed had heard about the ARIA and GAL2EN guidelines and their recommendations for prescribing second-generation antihistamines over the older first-generation antihistamines, while 77% of them had not heard of these position papers.

[Table 3](#) shows that 84% of doctors surveyed for this research study believed that second-generation antihistamines were more expensive than the first-generation antihistamines and hence they did not prescribe them to patients. 3% believed that the newer second-generation antihistamines were not available in pharmacies, and 5% believed that second-generation antihistamines were not as effective as first-generation antihistamines.

Discussion

Second-generation antihistamines are the drugs of choice for allergic rhinitis and urticaria compared to the alarming adverse effects of first-generation antihistamines.

Classic antihistamines were found to increase daytime sleepiness and decrease the sleep quality scores. New-generation antihistamines reduced sleep latency and dream anxiety, and increased daytime sleepiness and sleep quality.[\[6\]](#)

Among the three main sensory systems responsible for postural control (visual, vestibular, and somatosensory), d-chlorpheniramine may have a larger effect on the visual and/or vestibular systems in susceptible individuals.[\[7\]](#)

In view of the potential detrimental effects of residual daytime sedation on school performance and study, impaired productivity at work and, possibly more importantly, driving motor vehicles, it is clear that it is better not to offer a sedating antihistamine at night for the treatment of CSU.[\[8\]](#)

Allergic rhinitis is a disease inducing work absenteeism and a reduction in work productivity. Moreover, using sedative H1-antihistamines, work productivity is reduced even further.

These data indicate that allergic rhinitis may have an important impact on occupation and worker's

productivity.[9] Patients are bothered by fatigue, poor performance and concentration at work, headaches and malaise. Seasonal allergic rhinitis may be associated with a reduced ability to learn. Treatment with sedating H1-antihistamines will aggravate these problems, whereas treatment with nonsedating H1-antihistamines will only partially reverse the limitations in learning.[4]

Conclusion

Allergic rhinitis and its impact on asthma guidelines have brought attention to allergic rhinitis and its impact on asthma, but have also proposed a new classification in terms of symptoms severity and persistence useful for tailoring treatment on patients' phenotypes. Their further dissemination is needed; furthermore, they represent a cornerstone for the scientific community through a continuous update on relevant issues such as rhinitis phenotypes, disease management on the basis of new treatments, clinical trials transferability in real life, and allergic rhinitis management in public health programs.[10]

First-generation or classic antihistamines are still overused as they are over the counter and patients are aware about them. Doctors prescribing them also have less to none control over the sale of first-generation antihistamines. This causes a large variability in the usage of second-generation antihistamines, which are preferred drugs of choice for allergic rhinitis and urticaria. The main reason for not prescribing the second-generation antihistamines was due to the increased cost per tablet compared to the more economical first-generation antihistamines. The classic antihistamines are well known and since patients can buy them over the counter, they are the ones that are more often used. This points toward an economic burden on the patients that are suffering from these diseases. But studies have found that using second-generation antihistamines reduced the total patient costs for persistent allergic rhinitis.[11]

Most doctors are not aware of the new guidelines of antihistamine prescription that have been published, namely the ARIA[4] and GA2LEN[5] position papers. These papers strongly caution the use of sedating first-generation antihistamines and advise the use of the newer second-generation antihistamines. Numerous doctors still do not pay heed to this and still continue to prescribe sedating antihistamines. Also, due to the economic burden of patients, the newer non-sedating antihistamines are more expensive compared to the first-generation antihistamines and this is another contributory factor leading to continuous rampant use of sedating first-generation antihistamines. Doctor awareness is a key factor that must be looked into to solve this problem of prescription in sufferers of allergic rhinitis and urticaria.

What is new?

First generation antihistamines are being grossly overused by doctors prescribing them as the ARIA and GALEN guidelines are not well known; also the cost of the first generation and more well known antihistamines is more than the lesser known more expensive second generation antihistamines.

Footnotes

Source of support: Nil

Conflict of Interest: None declared.

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Figures and Tables

ILLUSTRATION 1

PROFORMA:

Name:

Specialty:

1. Which antihistamines do you prefer to treat urticaria and allergic rhinitis? First gen/second gen (names of top 2 drugs)
 2. Do you prescribe second-generation antihistamines? Yes/No
 3. Do you think the side effects of classic/first-generation antihistamines hamper daily activities of patients? Yes/No
 4. Have you heard about the new guidelines of prescribing antihistamines (ARIA/Galen)? Yes/No
 5. Do you advise patients to not consume alcohol or drive while taking antihistamines (especially if 1st generation antihistamines prescribed)? Yes/No
 6. Do you prescribe different antihistamines based on patients occupation/pregnancy/age (children or elderly)? Yes/No
 7. Do follow-up patients complain of difficulty staying awake/sedation/feeling sleepy or disoriented after taking prescribed antihistamines? Yes/No
 8. Why do you not prescribe second-generation antihistamines?
 - Too expensive
 - Not available in most pharmacies
 - Not as effective as first-generation antihistamines
 9. Does patient ask for a first-generation antihistamine he's familiar with rather than one you prescribe? Yes/No
-

Table 1

	Drug		
	1 st generation	2 nd generation	1 st and 2 nd generations
Q2. Do you prescribe second-generation antihistamines?			
Yes %			
Count	10	51	21
%	43.5	91.1	100.0
No %			
Count	13	5	0
%	56.5	8.9	0.0
Total			
Count	23	56	21
%	100.0	100.0	100.0
Chi-square tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	30.855 ^a	2	0.000

^a: Significant value

Prescription of Antihistamines

Table 2

	Drug		
	1 st generation	2 nd generation	1 st and 2 nd generations
Have you heard about the new guidelines of prescribing antihistamines			
Yes			
Count	1	13	9
%	4.3	23.2	42.9
No			
Count	22	43	12
%	95.7	76.8	57.1
Total			
Count	23	56	21
%	100.0	100.0	100.0
Chi-square tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	9.195 ^a	2	0.010

^a: Significant value

Guidelines for prescribing antihistamines

Table 3

	Drug			Total
	1 st generation	2 nd generation	1 st and 2 nd generations	
Q8. Why do you not prescribe second-generation antihistamines?				
Too expensive				
Count	14	52	17	83
%	60.90	94.50	85.00	84.70
Not available in pharmacies				
Count	2	1	0	3
%	8.70	1.80	0.00	3.10
Not as effective as first-generation antihistamines				
Count	3	0	2	5
%	13.00	0.00	10.00	5.10
1 and 2				
Count	2	2	1	5
%	8.70	3.60	5.00	5.10
2 and 3				
Count	1	0	0	1
%	4.30	0.00	0.00	1.00
1, 2 and 3				
Count	1	0	0	1
%	4.30	0.00	0.00	1.00
Total				
Count	23	55	20	98
%	100.00	100.00	100.00	100.00
Chi-square tests				
	Value	df	Asymp. Sig. (2-sided)	
Pearson chi-square	19.372 ^a	10	.036	
Likelihood ratio	20.311	10	.026	
Linear-by-linear association	3.384	1	.066	
No. of valid cases	98			

^a: Significant value

Reasons for not prescribing newer antihistamines

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