



Irrational Use of H1 Receptor Antagonist In Various Allergic Patients, A Clinical Study in Hyderabad, Sindh

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Abstract : The objectives of current study were to quantify the number of allergic patients utilizing H1 receptor antagonist with proper dose in allergic patients and to observe any side effects produced due to intake of H1 anti-histamine. A descriptive cross sectional study was conducted by collecting the patient's data on predesigned questionnaire. A total of 200 patients were enrolled via purposive sampling from out-door patients tertiary care hospitals of Hyderabad, Sindh for a period of 06 months. Out of total 200 patients male was 68.5% and female was 31.5%. Maximum number of patients was from the age group between 16 – 30 years. Patients having flu were more in number of 34%, 31% were of common cold, 21% of skin rash & 12% were of cough. 37%. Loratidine was commonly used in patients which is 2nd generation H1 receptor antagonist (anti-histamine). 48% patients were taking BD dose, 41% of OD & 11% patients were taking TDS. Through the survey & pre-designed questionnaire, it was found that most of the patients were taking anti-histamine without the prescription of doctor as all anti-histamines are easily available in all pharmacies and the patients were experiencing side effects because of no dose adjustment by doctor or a pharmacist. 67% patients were experiencing Dry nose, 51% headache, 45% of dry mouth and drowsiness each, 42% were feeling sickness. By initial studies it was concluded that patients are using H1 Receptor antagonists because of easy availability of drugs in our pharmacies. Study analysis also shows that patient taking anti-histamine for longer period of time due to lack of awareness. Frequently usage of anti histamine can cause drug dependence as well as adverse drug reactions

Keywords: Irrational use, H1 Receptor Antagonist, Allergic Patients, Hyderabad

1. INTRODUCTION

Receptors may defined as, "It is a protein molecule that is responsible for receiving the chemical signals from external environment particularly outside the cell". This binding of signals with receptors cause some stimuli particularly in electrical conductivity or conduction of messages within the cell or outside the cell (Congreve and Marshall 2010). Further these receptors may also recognize the endogenous receptors for example the acetylcholine receptors recognize the acetylcholine and send particular response according to their function. Moreover in field of other medical sciences protein may also take part enzymes, ion channels etc. Without depending upon the signal, the reaction from the cells totally depend upon the types of receptors. After binding with receptors the change takes place that initiate the signaling process within the cell or outside the cell/plasma membrane (Kou *et al.*, 2010) Depending upon the mechanism of action, receptors are of 03 type's i.e. Channel linked or ligand gated receptors, Enzyme linked receptors and G-Protein coupled receptors. The histamine receptors belongs to the G-Protein coupled receptors and of 4 various types. It includes H1 to H4 (Milligan 2013). The example of H1 receptors antagonists includes Loratidine, Cetirizine, Fexofenadine, Clemastine etc, H2 receptors antagonists includes Ranidine, Cimetidine, Famotidine, H3 receptors includes Ciproxifan and H4 includes

Thioperamide (Holgate, 1998) Each receptor has their distinguished functions like the functions of H1 receptors are contraction of ileum, itching particularly on skin, vasodilatation and asthma induced due to allergy. Allergy may also define as if the immune system interacts with those things which are present in environment may leads to hypersensitivity reactions (Dykewicz. and Fineman, 1998) These reactions sometimes caused problems and some time no any problems. The number of allergic diseases is present such as dermatitis, asthma due to allergy, hay fever and allergy due to food as well. Different types of sign and symptoms are produced such as the color of eyes become red, rashes on skin, fluids from the nose, emphysema and swelling takes place (Pise and Padwal, 2015) There are various types of allergens present in the environment but the most common are pollen and food. In developing countries, the allergic problem are one of the most common problems mainly 20% of the individual had allergic rhinitis and 6% were suffering from food and in various countries the percentages of asthma were ranged from 1 to 18% (Joel *et al.*, 2010) Rational uses of medicines are the key for successful therapeutic management. According to world health organization (WHO) rational use of medicine may define as the receiving of drugs/medicines by the patients according to the clinical needs with appropriate dose and frequency and also cost effective. The rational

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use of drugs is also one of the objectives of clinical pharmacy. Irrational use of medicines means that the utilization of medicines which is opposite to the rational use of drugs. According to reports of WHO, the percentage of inappropriate dispensed and prescribed medicines were more than 50 and also incorrect medications were taken by the patients with same percentage (Bhuvana and Patil, 2010). Following are the types of inappropriate use of medicines: two or more than two medicines are used, self medications of various drugs are used particularly antibiotics, frequent use of injectables as compared to oral formulations, the prescribed medicines are not according to guidelines. People taking 2nd generation H1 antagonist as a self-medication can central for more severity of his/her cases. By taking self-medication they do not take any recommended dose, so dose can fluctuate as over dose or under dose. Although by taking loratadine for a long term they go for drug resistance and also they are addicted to these drugs. These medications without prescription of pediatrician should never be used in the patient earlier than 6 years; safety and effectiveness in these children have not been confirmed. The study will help to ensure the safe use of second generation anti-histamine in allergic patients and it will also help to ensure rational therapy by monitoring and evaluating outcomes. This study will also help our health organizations as it will provide the assessment on anti-histamine and will highlight the importance of role of Pharmacist and other health care provider in health care system. The objectives of the study are to: To quantify the number of allergic patients utilizing Second Generation H1 Receptor Antagonist, To assess the proper dose of H1 receptor antagonist in Allergic patients, to check any serious effects produced due to intake of 2nd Generation H1 Anti-histamine.

2. METHODOLOGY

A descriptive cross sectional study was conducted by collecting the patient's data on predesigned questionnaire. A total of 200 patients were enrolled via purposive sampling from out-door patients tertiary care hospitals of Hyderabad, Sindh. The study was observational and conducted over a period of 6 months. Then the dose was compared with the standard (BNF) British National Formulary 69 edition and the data were analyzed using Microsoft Excel 2010. An informed consent from patients will be obtained before inclusion in study. Outdoor patients of age from 18- 60 years will be included in this study, all unconscious patients who cannot respond questioner and Patients having HIV-AIDS, Hepatitis B & C, Pulmonary & Extra-pulmonary tuberculosis, Cancer will be considered as exclusion criteria.

3. RESULTS AND DISCUSSION

A total of 200 patients were enrolled from out-door patients of a tertiary care hospital. In table 01 it was clearly showed that the male population were dominant i.e. 68.5% as compared to female i.e. 31.5%.

Table: 1: Gender Wise Distribution

S/No	Gender	Frequency	Percent
1	Male	137	68.5%
2	Female	63	31.5%
Total	200	100	100%

Table-2 showed the age with gender wise distribution, Out of 200 patients 66 male patients were among the age of 16 to 30 years i.e. maximum and in female gender the maximum number of patients were 30 who had aged between 31-45 years. While further description were mention in below table no 02.

Table: 2: Age With Gender Wise Distribution

S/No	Age Groups	Male	Percentage	Female	Percentage
1	16-30	66	48.17%	18	28.57%
2	31-45	48	35.04%	30	47.62%
3	46-60	21	15.39%	9	14.28%
4	More than 60	2	1.46%	6	9.52%
5	Total	137	100%	63	100%

Table -3 described various reasons of the patients to take H1 antagonist medications. Out of total 200 patient's maximum number of patients had taken H1 antagonist medication due to flu and the frequency was 68 (34%) followed by common cold and the frequency was 62 (31%).

Table: 3: Reason To Take H1 Antagonist

Causes/Symptoms	Frequency of Patients	Percentage	Cumulative Percentage
Flu	68	34%	34%
Common Cold	62	31%	65%
Skin Rash	42	21%	86%
Cough	24	12%	98%
Others	4	2%	100%
Total	200	100%	

Table -4 were described that who suggest the patients to take H1 antagonists. Out of total 200 patients 94 patients had suggested by the doctor and the percentage was 47% and 20 patients were on self medication.

Table 4: Who Suggest To Take Anti-Histamine

Suggestion	Frequency of Patients	Percentage	Cumulative Percentage
Doctor	94	47%	47%
Store Keeper	46	23%	70%
Relative/Friends	36	18%	88%
Self-Medication	20	10%	98%
Advertisement	4	2%	100%
Total	200	100%	

Table 5 were described the reason from refrain the doctor and majority of patients said easy availability of medication were the common reason and the percentage was 77.35% and only 3.78% patients said about the difficult accessibility to doctor.

Table 5: Reason From Refrain To Doctor

Reason	Frequency of Patients	Percentage	Cumulative Percentage
Easy Availability	82	77.35%	77.35%
Lack of Awareness	12	11.32%	88.67%
Lack of Money	8	7.55%	96.22%
Difficult accessibility to Doctor	4	3.78%	100%
Total	106	100%	

Table-6 had shown the prescribing trend of H1 antagonist. Out of total 200 patients the maximum patients were on Loratidine and the frequency was 74 (37%) and only 6 (3%) patients were on desloratidine.

Table 6: Prescribing Trend of H1 Antagonist Used

Generic Name	Frequency of Patients	Percentage	Cumulative Percentage
Loratidine	74	37%	37%
Chlorpheniramine	44	22%	59%
Cetirizine	38	19%	78%
Fexofenadine	18	9%	87%
Levocetirizine	12	6%	93%
Ebistine	8	4%	97%
Desloratidine	6	3%	100%
Total	200	100%	

Table -7 showed the classification of H1 antagonist that was prescribed to the patients and according to that most of H1 antagonist were under second generation and the frequency was 156 (78%).

Table 7: Prescribing Generation Of H1 Antagonist Used

Generation	Frequency of Patients	Percentage	Cumulative Percentage
First Generation	44	22%	22%
Second Generation	156	78%	100%
Total	200	100%	

Table 8 showed the frequency of doses and according to that maximum number of patients was taken twice doses in a day and the frequency was 96 (48%)

Table 8: Frequency Of Doses

Frequency of Doses	Frequency of Patients	Percentage	Cumulative Percentage
Once in a day	82	41%	41%
Twice in a day	96	48%	89%
Thrice in a day	22	11%	100%
Total	200	100%	

Table -9 showed the duration of therapy and it was clearly described that maximum number of patients was taken less than 5 days and the frequency was 110 (55%).

Table 9: Duration of Therapy

Duration	Frequency of Patients	Percentage	Cumulative Percentage
Less than 5 days	110	55%	55%
6-12 days	74	37%	92%
13-16 days	16	8%	100%
Total	200	100%	

Table - 10 showed the side effects reported due to H1 antagonists and it was clearly mentioned that dry nose was on topic as side effects and the frequency was 134 (67%) while skin irritation was on minimum side and the frequency was 84 (42%).

Table 10: Side Effects Due To H1 Antagonist

Side Effects reported	Frequency of Patients out of 200	Percentage
Dry Nose	134/200	67%
Headache	102/200	51%
Dry Mouth	90/200	45%
Drowsiness	90/200	45%
Feeling of Sickness	84/200	42%
Skin Irritation	56/200	28%

H1 antagonist medications are commonly used in various skin problems mainly pruritus and if not treated than it may damage the patients comfort(Criado, *et al.*, 2013) (Tivoli, 2009) Moreover the current study showed that 22% of H1 antagonist was prescribed while another study showed that 40% of H1 antagonist prescribed further current study showed more usage of H2 antagonist as compared to afzal khan Ak study i.e. 63.63%. In current study majority of patients had aged between 16-30 years while in afzal khan Ak study 52% of patients were more than 51 years (Khan *et al.*, 2013) According to another study The most common conditions are common cough and cold in which antihistamine were mostly prescribed while current study were also somewhat same results (Chan 1987) Another study reveals that Chlorpheniramine were most commonly prescribed while current study described that Loratidine was the most commonly prescribed drug (Anil and Beenta, 2009).

4. CONCLUSION

Initial finding of study shows that patients are using H1 Receptor antagonists because of easily availability of drugs in our pharmacies due to availability of non professional personals. Study analysis also shows that patient taking anti-histamine for longer period of time due to lack of awareness. Frequently usage of anti histamine can cause drug dependence as well as adverse drug reactions. Health care professions, Doctor/ Pharmacists should play their vital role in rational use of drugs.

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