

Assessment of Prescribing Trend of Drugs at Out Patient's Chest Ward of Government Tertiary Care Hospital Situated in Karachi

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Abstract

In this present study prescription patterns were assessed at outpatient chest department in a tertiary care Government hospital. A prospective study was conducted at outpatient's chest department of a tertiary care Government hospital in Karachi. The study was conducted from November 2013 to February 2014. The study sampled the prescriptions randomly. Inclusive criteria were based on those patients suffering from respiratory diseases were included in the study and treatment at outpatient chest department, whereas exclusive criteria were based on patients with other than respiratory diseases were not included in the study. Data was obtained from the prescription of the outpatients and these prescriptions were obtained from the pharmacy of the outpatient pharmacy. Data was analysed statistically by using SPSS version 20. In the present study total 241 patients were included in the study and their prescription containing at least one antibiotics were analysed. About 140 (58.09%) patients were females and 101(41.91%) were males. Out of 600 prescribed drugs, 169 were antibiotics in which mostly prescribed antibiotics group was 84(14% B-Lactam), 135(22.5%) bronchodilator, 89(14.8%) anti-allergy, 115(19.2%) analgesic and 48(8%) were antiulcerant. The drug utilization studies are important tool to sensitize and increases awareness among physicians, which ultimately improves rational prescribing and patient care.

Keywords: Antibiotics; Prescribing pattern; Tertiary care hospital

Introduction

A respiratory tract infection (RTI) is an infectious disease of the upper and lower respiratory tract. Infectious diseases become a significant threat to public health, posing risks to individuals regardless of age, sex, ethnic background, socioeconomic status, or lifestyle [1]. Respiratory tract infections are the predominant cause for most of the health care consultation. Viruses are perhaps the major cause for these infections. The types of Upper Respiratory Tract Infections (URTIs) are: common cold, pharyngitis, otitis media and sinusitis. URTI forms a continuum with lower respiratory tract infection, which is more often associated with bacterial infection.

Wide number of URTIs is caused by viruses that are self-limited [2].

A medicinal professional prescribes the medications demonstrate his or her capacity to choose the quantity of medications that are accessible in the market for that specific ailment and to decide the ones which will be most appropriate for their needs [3,4]. This requires a careful comprehension of different parts of both the infection and the medications by the treating doctor lastly giving the patient protected and solid medications in a cost effective manner In this manner, rational prescribing of medications assumes a fundamental part in not just effectively treating the illness with minimal adverse effects but also utilizing the resources that are accessible in a developing nation [5].

Antibiotics are among the highly consumed medicines and the most important thing is their rational use. Inappropriate and irrational use of antibiotics is common in practice mainly in countries that lack strict regulation on the use of antibiotics. Another factor for misuse and abuse of antibiotics are illiteracy, ignorance and poverty among the people of resource poor countries [6-8].

Development of antibiotic resistance is an alarming issue due to inappropriate use of antibiotics and it is a serious challenge to the healthcare professionals [9]. At healthcare professional level, the

most common problems with antibiotic therapy are their proper selection, dose and duration [10]. Lack of experience also contribute to inappropriate antibiotics prescribing [11,12].

Prescribing pattern studies examines are effective exploratory tools to discover the role of medications in the public eye. In a tertiary care Center, prescribing is relied upon to be prudent, suitable, sheltered, powerful and efficient. A definitive objective is to accomplish normal and powerful therapeutic care, especially in the monetarily developing countries [13].

The pattern of prescribing reflects the physician understanding of the disease process, his knowledge and application of pharmacotherapeutics. Inappropriate prescribing has been identified in many health facilities in developing countries. Different variables influence the prescribing behaviour of the clinicians and it is difficult to alter the behaviour without understanding the reason behind [14].

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In Pakistan only, few studies have been conducted on prescribing pattern of drugs prescribe for the management of respiratory diseases. Considering these facts, the purpose of this research is to analyse the prescribing pattern in respiratory disease patients and analysed the demographic bases of prescribing at a tertiary care hospital.

Methodology

Study design

This study was a prospective and observational study and was carried out for four months from November 2013 to February 2014. The study site was Chest Out Patient Departments (OPD) of a government tertiary care hospital situated in Karachi Pakistan.

Sample size and selection

Over all 1200 prescription were analysed from which a total number of 241 prescriptions were selected containing antibiotic by using convenient sampling. This sample size was exceeded the minimum 100 recommended by WHO [16] was employed in order to enhance the reliability of the results since this study was conducted in single health unit. Inclusive criteria were based on those patients suffering from respiratory diseases were included in the study and treatment at outpatient chest department, whereas exclusive criteria were based on patients with other than respiratory diseases were not included in the study.

Data collection

Prescriptions were obtained from the pharmacy of the Outpatient chest word department of the government tertiary care hospital. The drug data such as name of the drug, dosage form, dosing frequency, duration, route of administration and diagnosis data were also noted.

Data analysis

For easy sorting, the data obtained were entered into Microsoft Excel 2000 & different parameter related to patients were analysed using SPSS 20 version.

Ethical approval

The institutional ethical committee permission was taken to conduct this study from the ethical committee of the university.

Results

Results of prescribing pattern at chest ward. (Tables 1-3 and Graphs 1-3).

Discussion

Prescription is considered as a reflection of physician's attitude to the disease and role of the drug in treatment. It highlights the nature of health care delivery system. Little is known about the prescribing behaviour of physicians and the misuse of antibacterial in the management of outpatient [17]. Appropriate diagnosis of a disease & its treatment with medicines prescribing cover important aspect of patient care and improve outcome [13].

Gender	Frequency	percentage
Female	140	58.09
Male	101	41.91
Total	241	100

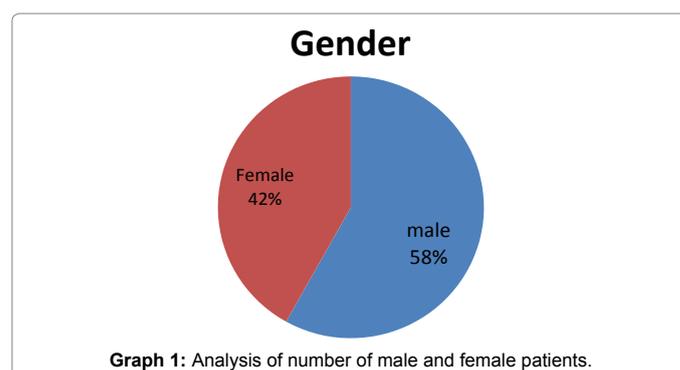
Table 1: Shows that in the present study total 241 patients were included in the study and their prescription containing at least one antibiotics were analyzed. About (140) 58.09% patients were females and 101(41.91%) were males.

Ages in years	Frequency	Percentages
10-30	53	22.0
31-40	55	22.8
41-50	52	21.6
51-60	40	16.6
61-70	16	6.6
71-80	14	5.8
≥ 81	11	4.6
Total	241	100

Table 2: Shows age wise categories of the patients included in the study. Age group category of 31-40 years were the most commonly affected age group of patients.

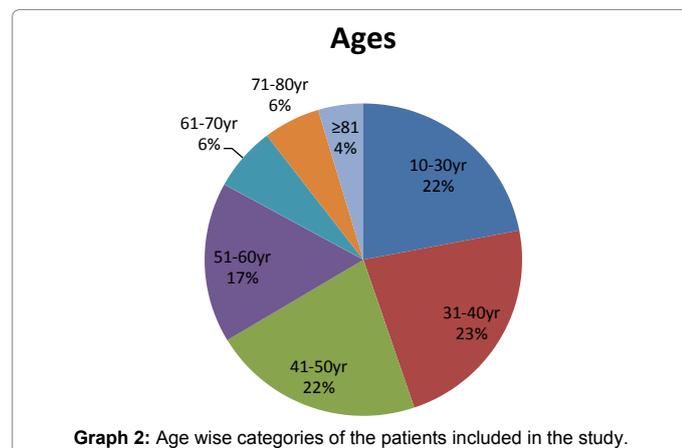
Drugs classes	Frequency	Percentage
B-Lactam	84	14
Antiprotozoal	2	0.3
Quinolones	74	12.3
Macrolides	1	0.2
Cephalosporin 1st generation	6	1
Anti-allergy	89	14.8
Bronchodilator	135	22.5
Antipsychotics	13	2.2
Antiulcer	48	8
Antiemetic	1	0.2
Hormonal preparation	1	0.2
Antituberculosis medicine	2	0.3
Blood coagulants	5	0.8
Analgesics/Anti-inflammatory	115	19.2
Antihypertensive/Anti angina	2	0.3
others	22	3.7
total	600	100

Table 3: shows that Out of 600 prescribed drugs, 169 were antibiotics in which mostly prescribed antibiotics group was 84 (14% B-Lactam), 135 (22.5%) bronchodilator, 89 (14.8%) anti-allergy, 115 (19.2%) Analgesic and 48(8%) Antiulcerant.

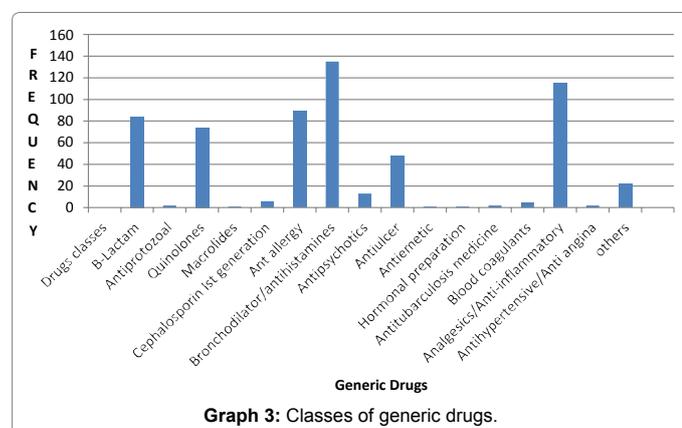


The current study provides important information on pattern and type for antimicrobial and other drugs used in outpatient in chest ward outpatient (OPD) in a tertiary care hospital. Over all 1200 prescription analysed from which 241 prescription were selected containing antibiotics and other drugs in the present study the male patients were 101(41.91%) and female patients were 140(58.09). In the current study female patients' ratio was higher than the male patients. In this study, the most common presenting complaint were cough and runny nose. similar results were obtained in the study conducted by Khalidi et al. [18].

This study shows the use of many therapeutics groups among adults and elderly. Table 2 shows the age wise categories of patients.



Graph 2: Age wise categories of the patients included in the study.



Graph 3: Classes of generic drugs.

The frequency of patients with the age group 31-40 year (55) (22.8%) was highest among all age groups. In a study conducted by beg et al. and reported that the most commonly affected patients were belongs to >45 years of age group which is dissimilar to our study [19].

In present study the most common diseases were chronic obstructive pulmonary disease (COPD), Bronchial asthma, Pneumonia and upper respiratory tract infections (URTIs), which is similar to the previous studies [20-22].

In the current study the mostly prescribed therapeutic group was Bronchodilator 135(22.5%), anti-allergy 89(14.8%) and in the current study the prescribed analgesic frequency was 115(19.2%). Eze and khalidi et al. [16,18] evaluated the similar results. In a study conducted by Goel RK et al. [14] which determine that Analgesics and antihistamines were the most frequently prescribed drugs. Antihistamines was the second in rank; and the prescribing of cough syrups was also high but in the current study we determine that the frequency of anti-allergy prescription was (89) (14.8%) which is on third position in prescription ranking prescribed by doctors.

In the current study among antibiotics the most commonly prescribed antibiotics in the current study was B-Lactam (84) (14%) and on second rank quinolones 74 (12.3%). Comparing to other studies similar results found in a study conducted by Alshakka et al. [15] which represents that the mostly prescribed antibiotic was amoxicillin (86) (21.5%). Beg et al. [1] evaluated the most commonly prescribed antibiotics was cephalosporin and levofloxacin, in study by Pandit PR et al. [19] evaluated amoxicillin as a mostly prescribe antibiotic, whereas in study by Errabelly P et al. [20] evaluated that cephalosporins was the most commonly prescribed antibiotic.

In present study 51.61% oral, 31.62% injectable and 16.75% inhalational drugs were prescribed, while in another study 86% drugs were prescribed by oral and 14% by nasal route [7].

There have been many forms of interventions aimed at changing physicians' prescribing behaviour. These have included audit studies, group discussion and feedback, introduction of general practice drug formulary or hospital formulary, guidelines for antibiotics and Non- Steroidal Anti-inflammatory Drugs. Information of rational prescribing should be promoted and circulated at national and local medical meetings and the input from local practitioners should be considered. It is recommended to enhance doctors' awareness of the lack of proven benefits and the definite high cost and side effects of many prescriptions for self-limiting illness.

Conclusion

In conclusion, this study has clarified the prescribing pattern for Respiratory tract infection in a section of the Karachi population. Prescribing antibiotics and other medications for RTI is still high and needs rationalization. Training on and implementation of the national protocol for diagnosis and treatment of protocol for the management of RTI among adults is suggested. Further studies to explore the knowledge, skills and attitudes of physicians towards prescribing for RTI are needed.

References

- Beg MA, Dutta SB, Bawa S, Kaur A, Vishal S, et al. (2017) Prescribing trends in respiratory tract infections in a tertiary care teaching hospital. *Int J Res Med Sci* 5: 2588-2591.
- Joseph N, Bharathi DR, Sreenivasa B, Nataraj GR, George N, et al. (2016) Prescribing pattern of drugs in upper respiratory tract infections in pediatric out patients. *Int J Contemp Pediatr* 3: 1006-1008.
- Pavani V, Manasa C, Nalini M, Ramya TK, Parmar YM (2012) Study of prescribing pattern of common health problems. *Intern J Pharma and Bio Sci* 2: 22-31.
- Sharma AK, Dahiya N, Kairi JK, Bharati SM (2015) Prescription patterns of antihypertensive drugs in a tertiary care hospital in India. *Int J Basic Clin Pharmacol* 4: 55-59.
- Kolasani BP, Sasidharan P, Divyashanthi, CM (2017) A prospective study of prescribing pattern of drugs among in-patients of gynaecology department in a tertiary care teaching hospital in South India. *Int J Basic Clin Pharmacol* 5: 1321-1326.
- Hulscher ME, vanderMeer JW, Grol RP (2010) Antibiotic use: how to improve it?. *Int J Med Microbiol* 300: 351-356.
- Zolaly MA, Hanafi MI (2011) Factors affecting antibiotics' prescription in general pediatric clinics. *J Taibah University Med Sci* 6: 33-41.
- Gebeyehu E, Bantie L, Azage M (2015) Inappropriate use of antibiotics and its associated factors among urban and rural communities of Bahir Dar city administration, northwest Ethiopia. *PLoS One* 10: e0138179.
- Ahmad A, Khan MU, Moorthy J, Jamshed SQ, Patel I (2015) Comparison of knowledge and attitudes about antibiotics and resistance, and antibiotics self-practicing between Bachelor of Pharmacy and Doctor of Pharmacy students in Southern India. *Pharm Pract* 13: 523.
- Ruvinsky S, Monaco A, Perez G, Taicz M, Inda L, et al. (2011) Reasons for inappropriate prescribing of antibiotics in a high-complexity pediatric hospital. *Rev Panam Salud Publica* 30: 580-585.
- Cadieux G, Tamblin R, Dauphinee D, Libman M (2007) Predictors of inappropriate antibiotic prescribing among primary care physicians. *CMAJ: Can Med Assoc J* 177: 877-883.
- Means AR, Weaver MR, Burnett SM, Mbonye MK, Naikoba S, et al. (2014) Correlates of inappropriate prescribing of antibiotics to patients with malaria in Uganda. *PLoS One* 9: e90179.
- Thomas LS, Lavanya S, Sudaroli M, Kumar GP (2014) Prescribing Patterns of Drugs in Outpatient Department of Paediatrics in Tertiary Care Hospital. *Indian J Pharmacy Practice* 7: 17.

14. Goel RK, Bhati Y, Dutt HK, Chopra VS (2013) Prescribing pattern of drugs in the outpatient department of a tertiary care teaching hospital in Ghaziabad, Uttar Pradesh. *J Appl Pharm Sci* 3: S48-S51.
15. Alshakka M, Said K, Babakri M, Ansari M, Aldhubhani A, et al. (2016) A Study on Antibiotics Prescribing Pattern at Outpatient Department in Four Hospitals in Aden-Yemen. *J Pharm Pract Comm Med* 2: 88-93.
16. Eze UIH, Olowu AO (2011) Prescribing Patterns and Inappropriate Use of Medications in Elderly Outpatients in a Tertiary Hospital in Nigeria. *Tropical J Pharmaceutical Res* 10: 19-25.
17. Ain MR, Shahzad N, Aqil M, Alam MS, Khanam R (2010) Drug utilization pattern of antibacterials used in ear, nose and throat outpatient and inpatient departments of a university hospital at New Delhi, India. *J Pharm Bioallied Sci* 2: 8-12.
18. Al-Khalidi YM, Diab M, Al-Gelban KS, Al-Asmari AS, Al-Amin S, et al. (2005) Prescribing pattern for acute respiratory tract infection in primary healthcare: Aseer region Saudi Arabia. *J Family Community Med* 12: 121-126.
19. Pandit PR, Kokanii V, Bhave KA (2016) Prescribing pattern of antimicrobials used for the treatment of acute respiratory tract infections in children. *IJARSAT* 18: 171-175.
20. Errabelly P, Ramavath V, Afreen A, Sanaboina A (2015) Analysis of the prescribing pattern of antibiotics in respiratory tract infections at department of medicine at a tertiary care teaching hospital. *IJPSR* 6: 2693-2697.
21. Mahajan HM, Date AP, Badwaik RT, Borkar AS, Wanmali SS, et al. (2014) Analysis of pattern of antimicrobial use in RTIs in a tertiary care hospital of central India-A drug utilization study. *J Cont Med A Dent* 2: 59-64.
22. Tiwari P, Ahlawat R, Gupta G (2014) Prescription patients of upper respiratory tract infection at a pediatric outpatient clinic in Punjab. *Indian J Pharm Pract* 7: 26-32.