DEMOGRAPHIC STUDY ON DISEASE PREVALENCE AND THEIR TREATMENT PATTERN IN A LOCAL HOSPITAL OF A SEMI-URBAN COMMUNITY

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ABSTRACT
Diseases are an inevitable aspect of society and thereby their appropriate treatment is an important responsibility of the medical community. Before instilling any therapy, proper understanding of the pathophysiology of the ailment, is of utmost importance. The next important aspect is the role played by experience and evidence based practices by physicians and the entire health care team, in finding the best possible cure for the ailment. The study was carried out to find out the prevalence of diseases and treatment pattern in village of Pilani. This is a review generated on the basis of analysis of patient cases. A total of 1,135 patient cases were analysed over a period 4 years i.e. January 2005- December 2008. Respiratory tract infection, Asthma, Fever and Anxiety were commonest aliments urging people to seek medical attention. This is also in agreement with the natural settings of the area as Pilani is a place struck constantly with sandstorms, both extremities of season and with a huge population of illiterate people, predominantly farmers and labour class. The analysis was done after direct observation of prescription and monitoring patient signs and symptoms. Physicians were found to follow both, experience and evidence based prescription practices. A large number of prescriptions included cephalosporin antibiotic – mostly third generation, many a times slightly higher than prescribed doses, mainly due to the resistance pattern of pathogens, observed in the community. At the same time patients were found not completing the antibiotic course and so spent on an average 5 days in the hospital mainly attributed to illiteracy, poverty and poor understanding, discontinuation of medication with slight improvement in symptoms.

KEYWORDS: Diseases Pattern, Semi Urban Community, Antibiotic Resistance

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INTRODUCTION

Medicines are a vital part of human existence[1]. Other than giving longevity, these have alleviated a number of disease prevalence. A big chunk of its contribution goes to treatment of neuro-psychotic disorders[2]. In today's fast pacing, bustling life medicines have supported as strong pillars to those who are overweighed with demands at work place, students who constantly suffer from examination fever, children who time and again are either hypocalcaemic or invariably malnourished[3].

However of lately the reports of abuse of medicines is high on list both by medical practitioners and the lay men. The growing emergences of resistance to antibiotics by microorganisms have added to concern of health care workers[4]. The comeback of diseases in more virulent forms which had become history, example multi drug resistant tuberculosis, once known to have been pandemic. The study here reveals how prescription drugs, their combination and poor compliance on part of patient leads to contribution to hospital acquired infections and moreover resistance[5]. Antibiotic resistance results from gene action. In a form of microbial sex called transformation, one bacterium may take up DNA from another bacterium. Most frightening, however, is resistance acquired from a small circle of DNA called a plasmid that can flit from one type of bacterium to another. A single plasmid can provide a slew of different resistances[5]. In semi–urban areas like Pilani, acquired bacterial resistance to antimicrobial agents is common in isolates from healthy persons and from persons with community-acquired infections[6-7]. The intersection of two important recent trends—increased community antimicrobial resistance and increased mortality with inadequate antibiotic therapy—creates a challenge for the clinician to understand the potential for resistance in the community, and to make better decisions about antimicrobial therapy[8]. The increased prevalence of antibiotic resistance is an outcome of evolution. Antibiotic use provides selective pressure favouring resistant bacterial strains; inappropriate use increases the risk for selection and dissemination of antibiotic-resistant bacteria, which are placed at a competitive advantage[9]. Nevertheless, excessive clinical use (a form of misuse) is at least partially responsible for the escalating rates of resistance, especially in hospital settings[10]. Health workers in semi-urban areas have almost no access to objective health information. Well-trained health personnel are scarce and cannot serve the entire population. They are less aware of the deleterious effects of inappropriate antibiotic use. In areas like Pilani antibiotics can be purchased without prescription, even when the practice is not legal. Another cause of antibiotic abuse and selection for resistant bacteria is poor patient compliance.

MATERIALS AND METHODS

The study was a survey based on report generated by M. Pharm. students of Birla Institute of Technology and Science, Pilani, Rajasthan. The town has a population of around 1 lakhs and the majority, comprises of illiterate people. The patient cases were collected each semester by students of M. Pharm. who made visits thrice a week to the local hospital. The data collected was then compiled and analysed for understanding the disease prevalence and treatment outcome. The local hospital caters to the need of more than 200 villages in and around Pilani.

Observations

Of the total cases analyzed 1,135, a large number comprised of adults with breathing difficulties of varies forms such as asthma, respiratory tract infection (RTI)[11].

Demographic Parameters Evaluated

A major population was that of males whereas females formed minority this could be because of gender bias, (**Table 1**). It means females were not encouraged to come forward and remained in the back picture, unless in life threatening situation, which can be attributed to the cultural background of the people. The percentage of adult's patient was more visiting to the hospital (**Table 2**). It could be due to the life and working habit of the person in the residential area of Pilani. Mostly the disease occurrence was that of breathing difficulties like asthma, respiratory tract infections acute as well as chronic. Anaemia was more associated with that of women and in severe, (**Table 3**). Cephalosporins were the most frequently used class of antibiotics (**Table 4**). More than 50% of the total number of prescriptions comprised of cephalosporins given either alone or in combination with others class. The second choice of antibiotic

was found to be *Amikacin* given majorly in lower respiratory tract infection (LRTI) cases combined with Amoxicillin. Other drugs given in respiratory tract infections (RTI) were *Salbutamol*, *Budesonide* and Hydrocortisone. Inappropriate nebulisation lead to inadequate amounts of drug reaching the systemic circulation resulting in failure of therapy especially in case of neonate and paediatric patients. Spasmoproxyvon forte, a combination preparation of *Diclofenac sodium* and *Dicyclomine* was used largely for analgesic, antispasmodic action in cases of pain in abdomen or appendicitis conditions (**Table 4**).

RESULTS & DISCUSSION
This study throws light on disease prevalence and prescription pattern in treating the same. Antibiotics formed majority of the various class of medicines in the prescriptions (**Table 4**). Some of the complications observed were Diabetes, Coronary heart failure, Gastric Ulcers, Accidents mostly in geriatrics. Averages of 5 days were spent by each of the IPD (In-Patient Door) patient in the hospital. The hospital facilities were not sufficient to make ends meet in times of seasonal changes, emergencies such as accidents or an attack of asthma or coronary heart failure. On being referred to higher centres patients had to be taken a minimum of 200 kms of distance to avail better supportive care, (**Table 5**). Documentation of vaccination was not done for newborns and infants and neither was any initiatives taken to implement vaccination programmes. Neonatal septicaemia amongst newborns indicated lacunas in maintenance of appropriate disinfection, (**Table 3**). Due to the large number of patients coming to the hospital and lack of facilities made individualised therapy difficult. The community was not receptive to understanding the need for therapy because of high level of illiteracy and cultural beliefs among them.

CONCLUSION
The study reveals a high preponderance of diseases like asthma, respiratory tract infection, appendicitis, anaemia among people of Pilani. Some treatment facilities like better furnished testing laboratories; appointing trained and vigilant staff will aid doctors to better decide upon the treatment [12]. Educating masses about diseases their prevention and due treatment by campaigning, posters, talks through audiovisual aids will create awareness among patients [13]. The hospital is a charity run hospital and non-profit organization.

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Table 1: Gender distribution

S. No.	Category	No. of patients	% of total
1	Male:	725	63.876652
2	Female	410	36.123348

Table 2: Age distribution

S. No.	Category	No. of patients	% of total
1	Neonate	50	4.40
2	Infant	102	8.98
3	Paediatric	104	9.16
4	Adult	724	63.78
5	Geriatric	155	13.65

Table 1 and 2 represent the number and age of the patient the analysed in the report.

Table 3: Showed the various disorders prevalent in the sub-urban area of Pilani along with the no. of patient suffering form the particular disease

S. No.	Category	No. of patients	% of total
1	Anemia	56	4.93
2	Asthma	61	5.37
3	Lower Respiratory Tract Infection	97	8.54
4	Asthmatic Bronchitis	24	2.11
5	COAD	42	3.70
6	Upper Respiratory Tract Infection	12	1.05
7	Respiratory Tract Infection	287	25.28
8	Pneumonia	13	1.14
9	Jaundice	8	0.70
10	Hepatitis	17	1.49
11	Neonatal septicemia	15	1.32
12	Malaria	22	1.93
13	Diabetes	7	0.61
14	Hypertension	31	2.73
15	Appendicitis	27	2.37
16	Pyrexia	96	8.45
17	Anxiety	18	1.58
18	Others	302	26.60

Table 4: Displays the drug mostly widely prescribed in the Pilani hospital

Medicines	No. of prescriptions
Cephalosporins	630
Amikacin	230
Amoxicillin	74
Salbutamol	230
Budesonide	131
Hydrocortisone	106
Diclofenac	113
Dicyclomine	66
Proton pump inhibitors	93
Ranitidine	84

Table 5: Represents the treatment outcomes in the clinical setup of the Birla Sarvajanic hospital Pilani

S. No	Category	No. of patients	% of total
1	Cured	238	20.96
2	Improved	822	72.42
3	Referred to higher centre	33	2.907
4	Do not Respond	35	3.08
5	Expired	7	0.61