

Drug utilization pattern in Outpatient Department at Tirumala

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Abstract: Aim: To study the drug utilization pattern in Aswini hospital, Tirumala Tirupati Devasthanam (T.T.D), Tirumala and evaluate pattern of acute diseases to identify potential causes and their prevention.

Materials and methods: This is a prospective observational study involving 10,000 Outpatients. Prescriptions were collected from Out Patient Department (OPD). Data expressed as percentages. **Results :** A total of 27,900 drugs were prescribed. The commonly prescribed drugs were paracetamol(42%), cetirizine (30%) and antibiotics (8%). 40% of patients suffered from fever, 32% with cold, 14% with cough and 10% with cold and cough. **Conclusion:** Fever, cold and cough are major ailments observed in this study. Health education of pilgrims and improvement of sanitation in hotels and bathing places may reduce the incidence of diseases.

Keywords: Pilgrim centres, Out patients, Diseases, Treatment, Drug utilization and Prevention

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I. Introduction

Several people undertake pilgrimage to holy places to get peace and contentment. Travel to pilgrimage centres is reported to have phenomenally increased in the past few decades; it is a mass movement when viewed in terms of magnitude and frequency of such travel¹. Mass Gatherings (MGs) are defined by the World Health Organization (WHO) as occasions whether planned or spontaneous that attract enough people to strain the planning and response resources of the community, city or nation hosting the event (World Health Organization, 2008)². Mass gatherings (MGs) are events attended by a sufficient number of people to strain resources³. In India, there are many pilgrim centres. Among these, temple shrine of Lord Sri Venkateswara at Tirumala is a renowned pilgrim centre. Devotees go in mobs and number will be more than 50,000 daily on average. On special festival days and holidays it may reach one lakh. These impacts typically include short-term peak demands exerting stress on basic services, accumulation of huge quantities of residuals (wastes), high levels of pollution and overcrowding¹. Globalization and travel have given rise to larger, more frequent cross-border mass events that facilitate the spread of communicable diseases, particularly emerging infectious diseases⁴. Intense crowding and the diversity of ethnic groups and nationalities are in attendance⁵. Mass gatherings are characterized by the concentration of people temporally and spatially, and may lead to the emergence of infectious diseases due to enhanced transmission between attendees⁶. Participants have diverse immunological status, the specific practices that may be carried out at the event (e.g. mass shaving at religious events), and the potential limited access to high quality food and water suppliers can all affect risk⁷. Tirumala Tirupati Devasthanam runs Aswini hospitals for the treatment of afflicted pilgrims. Mass Gathering Medicine (MGM) is the field of study that analyzes the management of these events in order to employ strategies to effectively enhance the delivery of health care because poorly managed mass gatherings can have significant morbidity⁸. "Mass Gatherings Health" is an emerging discipline⁹. For most MGs, the main risks are respiratory or gastrointestinal diseases⁷. This study was planned to assess the acute complaints of the pilgrims and the drugs used to treat them.

II. Materials and Methods

This is a prospective observational study conducted in outpatient department (OPD) of Aswini Hospital which is run by Tirumala Tirupati Devasthanams at Tirumala, Chittoor district, Andhra Pradesh. Permission from the Hospital Superintendent was taken to conduct the study. Ethical clearance was taken prior to study. The study was done for a period of one month from 1st April to 30th April 2017. Data was collected by interviewing outpatients and their prescriptions analyzed. Demographical, clinical and medication details were collected from prescriptions. Daily there were more than 300 patients in each shift. 10,000 prescriptions were collected for the data. Patients with acute symptoms between the ages of 12 to 80 years were interviewed. Those patients with chronic illness like diabetes, hypertension, tuberculosis, hepatic and kidney diseases, malignancies,

pregnant women and children below 12 years were excluded. Local residents of Tirumala were also excluded. Data was entered in MS Excel and expressed as percentages.

III. Results

10,000 prescriptions containing 27,900 drugs were collected. 2.79 drugs per prescription was observed. Among these 6430 were males and 3570 were females.

Table1: Demographic data of the pilgrims

Age in years	Males (6430)	Females (3570)	Total (10,000)
12-19	536	443	979
20-29	1100	526	1626
30-39	1105	484	1589
40-49	1165	672	1837
50-59	1030	634	1664
60-69	1007	447	1454
70-80	487	364	851

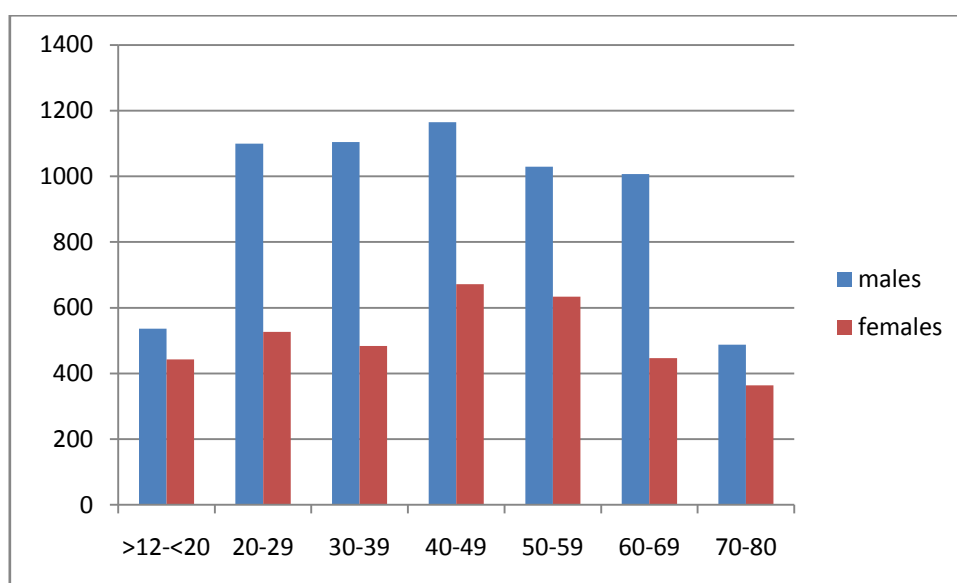


Fig 1: Graph showing age distribution among male and female outpatients

Table 2: Percentage of diseases

Disease / Ailment	Total	Percentage
Fever	2572	40
Cold	2122	32
Cough	900	14
Fever with cold and cough	643	10
Diarrhoea	96	1.5
Motion sickness	64	1
Lower limbs pain (foddlers)	51	0.8
Burning abdomen (APD)	26	0.4
Injuries	19	0.3

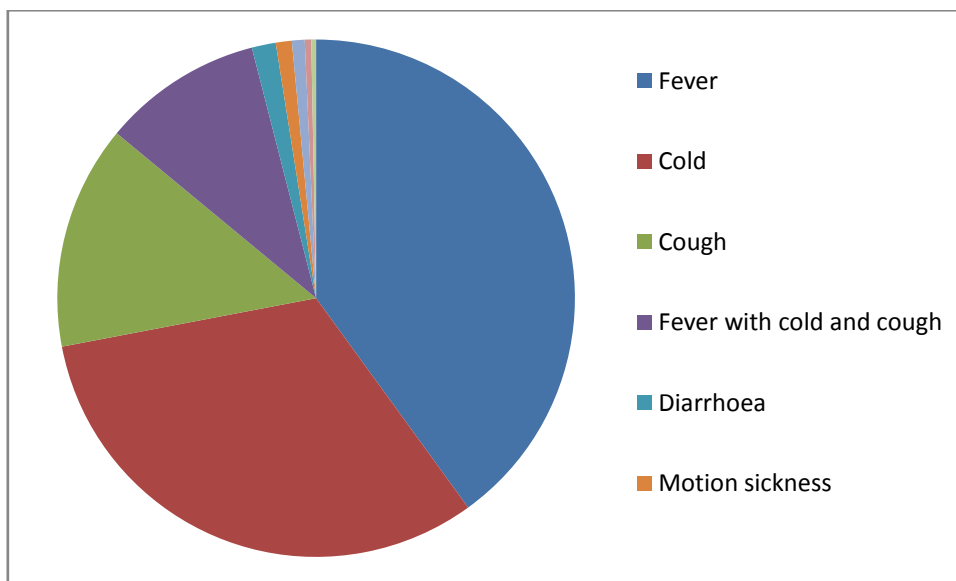


Fig2: Graph showing ailments presented by Out-Patients

Table 3: Percentage of drugs prescribed

Drug	Percentage	Drug	Percentage
Paracetamol	42	Ciprofloxacin	2
Cetirizine	30	Azithromycin	0.5
Vitamin B complex, Iron and Calcium	8	Cinnarizine	1
Antitussives	5	Diclofenac sodium	0.8
Salbutamol	2	Loperamide	0.3
Nebulization (steroids)	1	Pantoprazole	1
Chloroquine	0.5	Digene	0.1
Amoxicillin	3.5	Inj. T.T.	0.1
Ampicillin	2		

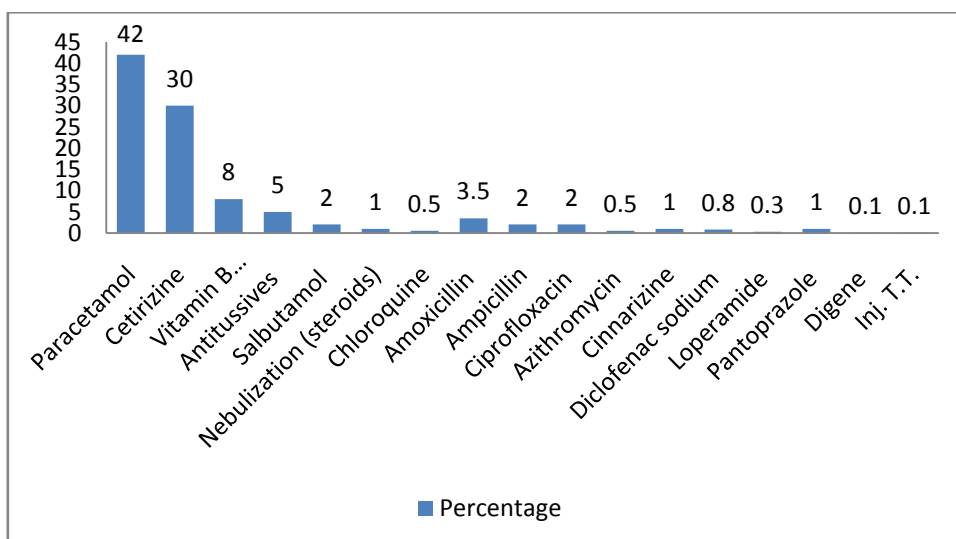


Fig3: Graph showing the percentage of drugs prescribed.

Mostly, drugs were prescribed with generic names and also from the National List of Essential Medicines, 2015. Injection Tetanus Toxoid was the injectable preparation(0.1%) used.

IV. Discussion

10,000 prescriptions with a total of 27,900 drugs in them were analysed. An average of 2.79 drugs per prescription was noted. Generally the pilgrims were given drugs for one or two days i.e less than 3 days as many of them return home. Males outnumbered the females as outpatients. Commonly, the patients who presented as outpatients belonged to the age group of 40-49 years as seen in Table1 and Fig1.

A total of 40% of patients suffered from fever, 32% with cold, 14% with cough, 10% with cold and cough, 1.5% with diarrhoea and dysentery, 1% with motion sickness, 0.8 % limbs pain due to travel on foot

ascending the seven hills, 0.4% with heartburn (Acid peptic disease), 0.3% with injuries as seen in Table 2 and Fig 2. Cold and cough is often due to viral infection. Inadequate shelter and overcrowding are major factors in the transmission of diseases with epidemic potential such as acute respiratory infections¹⁰. Food and water contamination at hotels may predispose to infections. A limited number of good quality food and water suppliers used by large numbers of participants could be grounds for a common source outbreak and limited availability of soap and water for hand hygiene and showers could lead to person to person outbreaks⁷. Gastro intestinal infections may occur due to faeco-oral transmission amplified by disregard for hygiene principles and sanitation.

A total of 27,900 drugs were prescribed and an average value of drugs per prescription was 2.79. As seen in Fig 3, most commonly used drugs are paracetamol (42%) and cetirizine (30%). Among antibiotics, amoxicillin (3.5%), ampicillin (2%), ciprofloxacin (2%) are used. Injection constituted 0.1% of drugs. Other drugs used are vitamin B complex, iron, calcium, antitussives, diclofenac sodium, chloroquine etc as seen in Table 3. Nebulisation with steroids and salbutamol was given for cases of severe asthma.

V. Conclusion

In this study, fever, cold and cough are the major ailments reported. Health education of pilgrims and improvement of sanitation in hotels and bathing places may reduce the prevalence of diseases. Certain steps should be taken in this context. Standard measures should include early recognition and reporting, environmental and engineering controls (e.g. availability of hand washing stations with facilities like soap and running water, hand sanitizer, and tissues, toilet and food preparation facilities), training and advice on best practice, and personal protective equipment⁷. Sufficient water quality and waste disposal are key in the prevention of cases and outbreaks of common disease⁷. Health education among hotel staff and pilgrims is necessary. Food preparation and food outlets should be monitored by the concerned authorities. Continuing the practice of fogging keeps mosquitoes and house flies in check. Identification of the source of infection so that control measures can be implemented and monitored⁷. Among source control measures, respiratory hygiene/cough etiquette is now considered as part of standard precautions¹¹.

Bathing in Sri Swami pushkarini (holy tank/teertha) is considered holy. It is observed that some pilgrims spit into pushkarini and wash clothes in the same tank. Strict prohibition of above practices and allowing devotees only after bathing just prior to stepping in the pushkarini will minimize water contamination.

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