

Drug Utilisation Evaluation Of Drugs Used In The Treatment Of Upper Respiratory Tract Infection In Tertiary Care Hospital

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ABSTRACT

The study aimed to determine Drug utilisation evaluation of drugs used in treatment of upper respiratory tract infections. 200 cases were collected during the six-month investigation at the KIMS Hospital in Secunderabad. The data was derived from patient case documents from a variety of departments where the patients underwent surgery. 200 prescriptions were examined to ascertain the prevalence of upper respiratory tract infections. We can assert that women constitute 42% of the population, while males constitute 58% when considering gender as a variable. The age group between 18 and 30 had the lowest proportion (12%), while the age group between 46 and 60 had the highest rate (23.5%).

Antibiotics and anti-inflammatory medications are administered more frequently than other medications. The URTI therapy demonstrated the lowest HS (bedtime) frequencies (3%) and increased OD frequencies (49%).

The study findings of drug utilization evaluation found that antibiotics, anti-inflammatory, painkillers and some other partial relief drugs are prescribed to achieve effective control and unwanted side effects in the treatment of URTI. The management was supported through mono, dual and multiple therapies. The data collected may be utilized by the practitioner and health care professionals to make clinical decision in order to get best treatment outcomes in patient with URTI receiving the prescribed medications.

Keywords: Respiratory tract infection, nostril, pharynx, nose

I. INTRODUCTION

Respiration is a biological activity that gives living things their energy to carry out their daily tasks. Cellular respiration can be classified as either anaerobic or aerobic. Anaerobic respiration happens when oxygen is not present, while aerobic respiration happens when oxygen is present. Human respiratory tract is composed of:

1. Nose
2. Pharynx (Throat)
3. Larynx (Glottis)
4. Trachea (windpipe)
5. Bronchi
6. Bronchioles
7. Lungs

UPPER RESPIRATORY TRACT SYSTEM (URT'S): It includes

1. Nostrils
2. Nose
3. Pharynx Associated structures.

LOWER RESPIRATORY TRACT SYSTEM (LRT'S) It includes

1. Trachea
2. Larynx
3. Bronchi
4. Bronchioles

5. Lungs

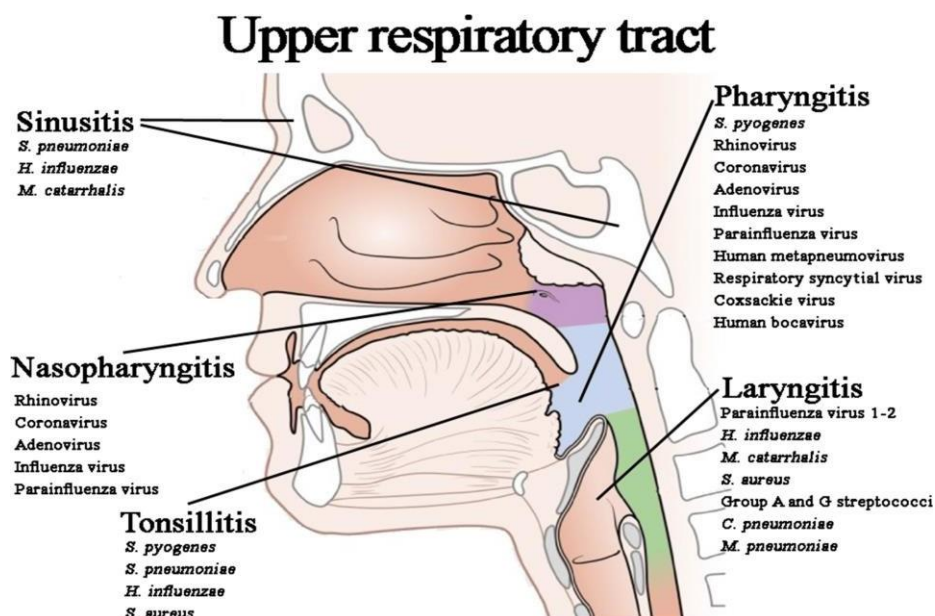
Upper respiratory tract infections characterized by self-limited irritation and swelling of the upper airways, accompanied by a cough and no symptoms of pneumonia.

These symptoms do not occur in patients who have a history of chronic bronchitis, emphysema, or chronic obstructive pulmonary disease, or who have no other disorders could explain their symptoms.

The nose, sinuses, throat, larynx, and expansive airways are all affected by upper respiratory tract infections. The exercise looks at the important the interprofessional team is to the treatment of patients with this illness

INFECTIONS IN UPPER RESPIRATORY TRACT :

1. Common cold
2. Pharyngitis
3. Sinusitis
4. Laryngitis
5. Rhinitis
6. Diphtheria
7. tonsillitis



SYMPTOMS INCLUDE:

1. Cough
2. Fever
3. Hoarse voice
4. Fatigue and lack of energy
5. Runny nose
6. Sore throat
7. Swollen lymph nodes (swelling on the side of your neck)

ETIOLOGY:		
BACTERIA	SITE OF INFECTION	RESPIRATORY INFECTION

GROUP- A Beta-haemolytic streptococcus	Throat, pharynx	Sore throat; pharyngitis
GROUP-C Beta-haemolytic streptococcus	Throat, pharynx	Severe acute pharyngitis
Corynebacterium diphtheria	Throat; pharynx	Diphtheria
Neisseria gonorrhoea	Oropharynx	Tonsillitis, pharyngitis
Neisseria meningitis	Larynx	Epiglottitis
Arcano bacterium haemolyticum	Pharynx	Pharyngitis
Mycoplasma pneumonia	Throat, pharynx	Sore throat, pharyngitis sinusitis
Haemophilus influenzae	Nasopharynx	URTI, epiglottitis
Bordetella Pertussis	Human respiratory mucosa	Whooping cough
Bordetella para pertussis	Human respiratory mucosa	Whooping cough (milder)

DIAGNOSIS:

1. Microbiology : A causal respiratory pathogen can be identified with the use of Gram stain and sputum culture. Although insensitive, blood microbiologic culture is also advised as a component of a diagnostic procedure
2. Molecular techniques: adenovirus, human metapneumovirus, influenza-virus, parainfluenza virus , respiratory syncytial-virus , SARS-CoV-2 , and other non viral diseases can all be detected using molecular techniques
3. Quick Diagnostic Examinations: some bacterial (such L. pneumophila , streptococcus pneumoniae , and group A streptococcus) , viral (like influenza virus , respiratory syncytial virus , and SARS-CoV-2) and fungal (like Histoplasma capsulatum) pathogens can be found with quick testing
4. PULSE OXIMETER: It is used to estimate how much amount of oxygen is present in the blood by using a small sensor that is usually placed on a fingertip or ear.
5. SPUTUM CULTURE TEST: It is most often detect bacterial or fungal infection which affects the lungs or airway passage. It is also known as phlegm test; it is a thick mucus made in the lungs which helps to trap foreign particles in specific type of infections
6. BLOOD CULTURE TEST: It is used to find out bacterial infections that been spread in to the blood stream such as pneumonia, bronchitis, sepsis, etc
7. CHEST RADIOGRAPHY: chest X ray is rapid imaging technique to identified lung abnormalities, conditions to the thoracic cavity, detection of pulmonary tuberculosis [TB]

DISEASES:

1. PHARYNGITIS:

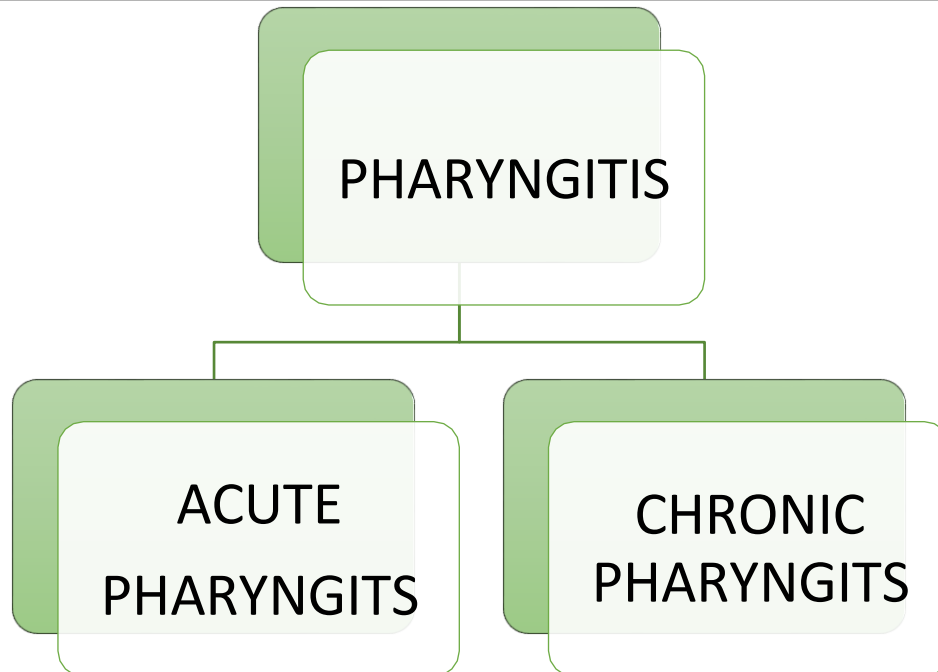
The pharynx, the tube in the throat, is inflamed. A sore throat, also known as pharyngitis, is a characterized pain, discomfort, or scratchiness in the throat. It frequently makes swallowing unpleasant. The inflammation of the oropharyngeal mucous membrane is known as pharyngitis

- Pharyngitis can be spread by bacteria or virus. The nose and the throat are often home to the bacteria that causes pharyngitis.
- Tiny droplets containing the virus or bacteria are released into the air when a person with illness coughs or sneezes.
- An individual can contact the infection by inhaling these microscopic droplets, coming into contact contaminated things, then touching their face and ingesting tainted food or drinks

• MOST COMMON ORGANISMS CAUSING PHARYNGITIS:

VIRAL PHARYNGITIS	BACTERIAL PHARYNGITIS	FUNGAL PHARYNGITIS
Rhinovirus	Streptococcus pyogenes	Candida albicans
Adenovirus	Haemophilus influenzae	
Coxsackievirus	Chlamydomphila pneumoniae	
coronavirus	Mycoplasma pneumoniae	
Respiratory syncytial virus		
orthomyxoviridae		

A.PHARYNGITS: The pharynx, the tube in the throat, is inflamed. A sore throat, also known as pharyngitis, is a characterized pain, discomfort, or scratchiness in the throat. It frequently makes swallowing unpleasant. The inflammation of the oropharyngeal mucous membrane is known as pharyngitis



- **ACUTE PHARYNGITIS:**

A sore throat and pharyngeal inflammation (with or without exudate) that develops quickly are signs of acute pharyngitis. Numerous bacterial, viral, and fungal infections, such as *Candida albicans* and group A streptococcus (GAS), can infect people with it. When cough, nasal congestion, and nasal discharge are absent, the cause is likely bacterial rather than viral. While enteroviral infections are more common in the summer and fall, bacterial pharyngitis is more common in the winter (or early spring) in temperate settings. In most cases, acute pharyngitis resolves on its own in two weeks or less.

- **CHRONIC PHARYNGITIS:**

A persistent inflammatory and/or irritating condition of the pharyngeal mucosa that lacks an infectious component is known as chronic pharyngitis. It may be atrophic, hypertrophic, or simple. Three forms of chronic pharyngitis can be identified based on clinical symptoms: dry chronic pharyngitis (atrophic), hyperplastic chronic pharyngitis (granular), and simple chronic pharyngitis.

TYPES OF CHRONIC PHARYNGITIS

1. Hypertrophic pharyngitis: The pharyngeal mucous membrane thickens and becomes clogged in hypertrophic pharyngitis.
2. Atrophy pharyngitis: Hypertrophic pharyngitis progresses to atrophic pharyngitis, which is distinguished by a thin, white membrane.
3. SIMPLE CHRONIC PHARYNGITIS: Formation of small lumps at the backside of throat

ETIOLOGY:

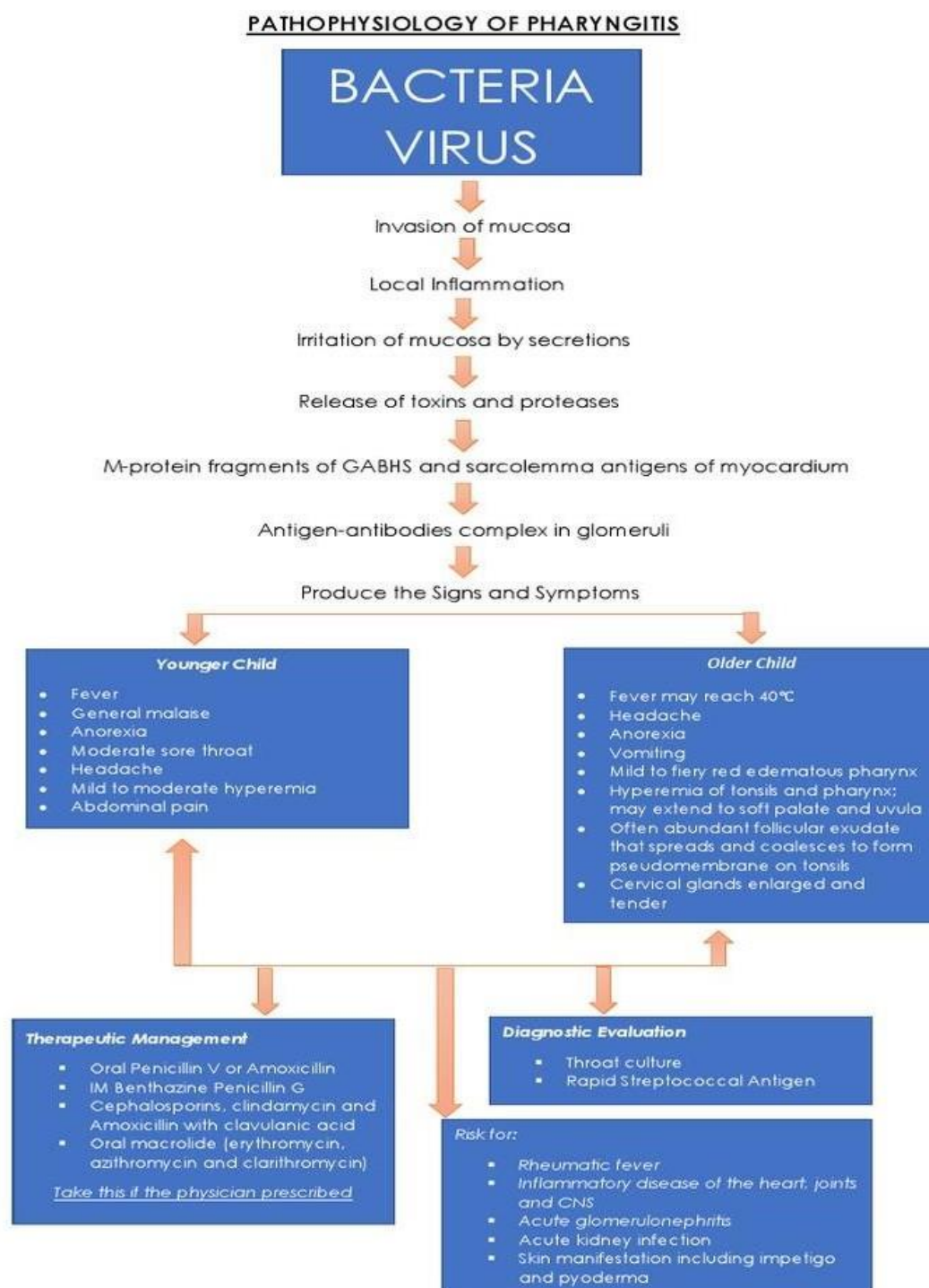
Pharyngitis can be spread by bacteria or viruses. The nose and throat are often home to the bacteria that cause pharyngitis. Tiny droplets containing the virus or bacteria are released into the air when a person with the illness coughs or sneezes. An individual can contract the infection by: Inhaling these microscopic droplets, contacting contaminated objects, stroking their face, and consuming contaminated food and drink

SYMPTOMS:

Depending on the source, sore throat symptoms can change. Among the symptoms and indicators could be:

- 1) A sore or scratchy feeling in the throat
- 2) Pain increases when speaking or swallowing
- 3) Inability to swallow swelling,
- 4) painful glands in your jaw or neck Red,
- 5) enlarged tonsils
- 6) Pus or white spots on your tonsils

6.A husky or hushed voice



DIAGNOSIS: 2TYPES

Bacterial:

1) Rapid antigen detection testing (RADT): Using dipsticks, these point-of-care tests identify viral and bacterial antigens in throat swabs obtained from the posterior oropharynx or tonsillar exudates.

2) Throat culture test: The gold standard test for pharyngitis is throat culture, which is more accurate than a quick antigen test. A pharyngeal smear used to identify the pathogens causing the infection is called a throat culture.

3) NAAT: Pharyngitis can be identified by a molecular test that looks for *Streptococcus pyogenes* (Strep A) DNA in a pharyngeal swab.

4) Antistreptolysin O titre test: is a blood test that seeks out antibodies against the chemical streptolysin O, which can be generated by the group A streptococcus bacteria.

Viral:

Pharyngeal smear:

1) To identify the pathogens causing the infection, a pharyngeal fluid exudate culture.

2) ANTI BIOGRAM: Provide an overview of the total percentages of pathogenic organisms that are vulnerable to specific antibiotics.

3) Physical examination.

4) blood test

SINUSITIS:

An inflammation of the sinuses, which are the passageways leading to the nose, is called sinusitis. An infection of the sinus lining close to the nose is called sinusitis.

ETHIOLOGY:

S.NO	ON THE BASIS OF LOCATION	ON THE BASIS OF DURATION
1.	Frontal sinusitis	Acute sinusitis (infection lasts up to 4 weeks)
2.	Ethmoid sinusitis	Sub-acute sinusitis (lasts between 4-12 weeks)
3.	Sphenoid sinusitis	Re-current acute bacterial sinusitis)

1. BACTERIOLOGY: *Streptococcus pneumoniae*, *Haemophilus-influenza*, *Moraxella catarrhalis*, *Streptococcus pyogenes*, *Staphylococcus-aureus*, *Klebsiella pneumoniae*.

2. VIRAL INFECTION: 90% of sinusitis occurs due to Rhinovirus, Coronavirus.

3. Pollutants: Chemical/irritants may trigger the build of mucus (e.g. pollens, dust etc.)

4. Nasal infections: Viral rhinitis followed by bacterial invasion.

5. Swimming and diving: infected water enters sinuses through ostium.

6. Trauma: Compound fractures or penetrating injuries.

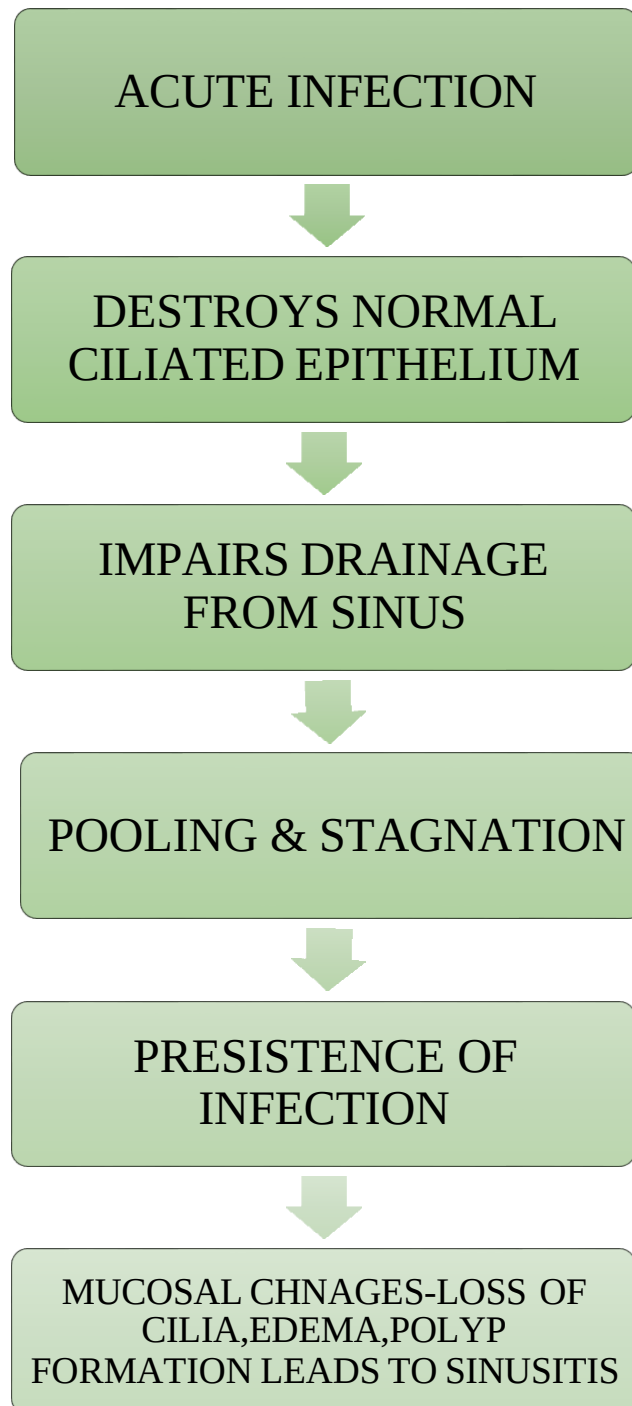
PREDISPOSING CAUSES:

LOCAL: Obstruction to sinus ventilation and drainage (DNS, polyp, neoplasms, edema of ostium).
Stasis of secretions in nasal cavity (Cystic fibrosis enlarged adenoids, choanal atresia)

Previous histories of sinusitis. **GENERAL:**

1. Environment: Cold and wet climate.
2. Poor general health: Exanthematous fever (measles, chickenpox), nutritional deficiencies, systemic disorders.

PATHOPHYSIOLOGY:



SYMPTOMS:

Symptoms vary depending on how long a condition lasts and how severe the symptoms are:
The symptoms include Trusted Source:

1. Nasal discharge which maybe green or yellow
2. A postnasal drip, where mucus runs down the back of the throat
3. Facial pain or pressure
4. Blocked or runny nose
5. Sore throat
6. Cough
7. Bad breath
8. Fever
9. Headache

10. A reduced sense and taste

11. Tenderness and swelling around the eyes, nose, cheek, and forehead

12. Toothache

DIAGNOSIS:

1) Posture test: In order to determine type of sinusitis a patient has, a postural test for sinusitis entails shifting the patient's position.

This can be done via examination in a half-sitting position

partial sinusogram

supine position.

2) Transillumination test: a technique that checks the sinuses for indications of sinusitis using a light

3) Radiograph: A sinus X-ray produces images of the sinuses, which are air-filled spaces behind the eyes, cheekbones, nasal bones, and forehead, using electromagnetic energy.

4) CT scan: diagnose and manage sinusitis

5) Smear culture: also called naso culture nasopharyngeal culture which is a painless test which collects the sample from nose by inserting a sterile swab.

6) EMMC: identify cause of sinusitis

7) Endoscopy: of nose and paranasal sinus

TREATMENT:

1) ANTIBIOTICS

2) ANALGESIC:

non opioid analgesic: Acetaminophen and nonsteroidal anti-inflammatory medications (NSAIDs), such as ibuprofen, diclofenac, and naproxen. For mild to severe pain, they work well.

opioid analgesic: Commonly referred to as narcotics, these comprise synthetic, semi-synthetic, as well as natural compounds such as fentanyl, hydrocodone, and morphine.

For extreme pain, they can be quite helpful, but they also have adverse impacts, like addiction.

compound analgesics: combination of both opioid and non-opioid analgesics

3) DECONGESTANTS:

First line oral Decongestant: pseudoephedrine, phenylpropanolamine

.First line topical Decongestant: phenylephrine, oxymetazoline

Moa: When α -adrenergic receptors are activated, the respiratory mucosa's blood vessels that are tighten, allowing airflow to resume. Vasoconstriction of the human nasal mucosa may be primarily caused by α 1A- and α 2B-adrenoceptors, which are the most strongly demonstrated in the nasal mucosa.

ADR: increase BP , trouble sleeping, headache, drowsiness

4) ANTIHISTAMINE:

preventing histamine from attaching to smooth muscle, endocrine cell, & peripheral nerve H1 receptors.

ADR: headaches, fatigue, dry mouth

5) STEAM INHALATION:

Loosen mucus in lung, throat and sinus. ADR: burn injury, scald injury

6) NSAIDS:

MOA: suppression of cyclooxygenase (COX) enzyme. Arachidonic acid cannot be converted into prostacyclin, prostaglandins, or thromboxane without cyclooxygenase.

ADR: hypersensitivity, gastrointestinal problems, kidney problem, etc

RHINITIS:

A disorder called rhinitis results in inflammation of the nasal mucous membrane, which produces stuffiness, sneezing, and a runny nose.

SYMPTOMS:

Other signs of rhinitis consist of: Coughing.

1) Blockage in the ears

2) Diminished perception of smell a sore throat

3) Dark rings beneath the eyes

4) Under-eye puffiness Weariness

5) agitation Anxiety

Pharmacological treatment: Drugs mostly used are :

Cetirizine Zyrtec

Loratadine Montelukast Fexofenadine Astelin

Claritin

MECHANISM OF ACTION:

LORATADINE A derivative of azatadine is loratadine. It shares a structure with tricyclic antidepressants. Because a carboxymethyl ester moiety has been added, it is less basic and more polar than the parent molecule.

This alteration reduces the drug's entry into the central nervous system. Because it lacks an ethylamine grouping, loratadine does not structurally like histamine.

Although loratadine is largely selective for the H1 receptor, it may also have some anti- muscarinic, anti- α -adrenergic, anti-serotonergic, and anti-leukotriene effects at larger dosages.

Descarbethoxyloratadine, an active antihistamine four times more-effective than loratadine itself, is produced by the liver's extensive first-pass metabolism of it.

Peak loratadine and descarbethoxyloratadine blood concentrations appear 1.5–3.5 and 1-2 hours after

dose, respectively.

TONSILLITIS:

The two oval-shaped tissue pads at the back of the throat, one tonsil on each side, become inflamed when someone has tonsillitis.

Tonsillitis manifests as enlarged tonsils, aching throat, trouble swallowing, and tender lymph nodes on the sides of the neck.

Although viral viruses are the primary cause of tonsillitis, bacterial infections also result in tonsillitis. The etiology of tonsillitis determines the best course of therapy, so a timely and precise diagnosis is crucial. Although tonsillitis removal surgery was originally a standard treatment, it is now often reserved for cases of tonsillitis that are severe, don't improve with conventional therapies, or occur repeatedly.

Tissue inflammation in the tonsils On either side of the back of the throat are fleshy pads called tonsils.

Symptoms and Causes :

Symptoms of tonsillitis :

Tonsillitis symptoms usually come on suddenly. They may include:

Sore or scratchy throat.

Pain or difficulty swallowing. Red, swollen tonsils and throat. White spots on your tonsils.

White, yellow or grey coating on your tonsils.

Fever above 100.4 degrees Fahrenheit (38 degrees Celsius).

Swollen lymph nodes (glands on the sides of your neck below your ears). Stomach pain or vomiting (more common in younger children).

Treatment :

Treatment for Adult Tonsillitis Tonsillitis home remedies Use these treatments to relieve the pain or discomfort brought on by tonsillitis.

Get adequate sleep to allow the body to fight infections by conserving energy instead of continuing with regular tasks. Drink a lot of liquids, especially warm ones, to stay hydrated and feel calm. Avoiding caffeinated products, like coffee, is important.

Use warm water to gargle for relief. Take lozenges for your throat. Steer clear of tobacco and smoke-filled areas.

Drugs mostly used in Tonsillitis are : Azithromycin
Amoxicillin

Clarithromycin

Mechanism of action :

Azithromycin is a macrolide antibiotic that either stops bacteria from growing or kills them. It is also marketed under the name Zithromax.

It accomplishes this by: preventing the synthesis of proteins by bacteria By attaching itself to the 50S subunit of bacterial ribosomes, azithromycin stops mRNA translation and polypeptide chain assembly.

Bacterial membrane penetration Because azithromycin is basic, it can more readily enter bacteria, particularly Gram-negative ones.

Cell accumulation: Azithromycin builds up in cells, especially phagocytes, and is transported to infection sites in high concentrations.

Changing the immune response Immunomodulatory effects of azithromycin may include modifying macrophage polarization and preventing the synthesis of proinflammatory cytokines. Bacterial infections of the respiratory, urogenital, and dermal systems are treated with azithromycin.

Diphtheria :

Diphtheria (dif-THEER-e-uh) is a severe bacterial infection that mainly affects mucous membranes of the nose & throat. Diphtheria is extremely rare in the United States and other affluent countries due to widespread vaccination against it.

However, many countries with insufficient health-care or immunization choices continue to have high diphtheria rates. Diphtheria is treatable with medicine. However, in severe cases, diphtheria can harm the heart, kidneys, and neurological system. Diphtheria can be fatal even when treated, particularly in youngsters.

any illness brought on by a toxin generated by some strains of *C. diphtheriae* is referred to as diphtheria. The dangerous consequences of diphtheria are caused by diphtheria toxin, not *C. diphtheriae*. In addition to killing healthy tissues, the toxin can lead to a number of dangerous health conditions.

SYMPTOMS AND CAUSES :

- 1) Throat discomfort.
- 2) weakness or exhaustion.
- 3) fever.
- 4) throat gland enlargement

TYPES OF DIPHTHERIA :

- 1) Respiratory Diphtheria and
- 2) cutaneous diphtheria are the two primary forms.

Respiratory diphtheria : The most prevalent and severe kind of diphtheria affects the tonsils, throat, larynx, or nose (voice box) Low-grade fever, sore throat, and a membrane affixed to the tonsils, pharynx, or nose are among the symptoms. can result in serious respiratory issues, heart failure, blood abnormalities, paralysis, coma, and even death.

2) Cutaneous Diphtheria: The rarest kind of diphtheria concerns the skin Blisters, sores, and skin rashes are among the symptoms, which can develop anywhere on your body. more prevalent in congested areas with bad living circumstances or tropical climates.

ETIOLOGY :

The bacteria that causes diphtheria, *Corynebacterium diphtheriae*, releases a toxin that causes tissue destruction. Respiratory droplets from infected or asymptomatic carriers of the bacteria are the means by which the bacteria are disseminated.

DIAGNOSIS:

- 1) Clinical Exam: If there is a white or gray membrane on the back of the throat, a doctor may suspect diphtheria
- 2) Bacterial Culture :To cultivate the bacteria, a tissue sample or throat swab from an infected site is brought into a laboratory. To ascertain whether *C. diphtheriae* is toxic, more testing is required after identification.
- 3) Toxin detection test :An in vitro immunoprecipitation assay called the Elek test verifies the generation of toxins.

Erythromycin

PHARMACOLOGICAL TREATMENT:

- Drugs mostly used are :
- Antitoxins
- Macrolides
- Antibiotics(Penicillin)

MECHANISM OF ACTION OF ERYTHROMYCIN:

Stops bacterial growth, probably by preventing peptidyl tRNA from separating from ribosomes, which stops RNA-dependent protein synthesis. for the treatment of infections caused by streptococci and staphylococci. The right dosage for children depends on their age, weight, and infection severity.

Half of the daily dose can be taken every 12 hours if bid dosing is preferred. For more serious infections, double the dosage.

has the extra benefit of being an effective anti-inflammatory drug because it prevents polymorphonuclear leukocyte movement.

II. LITERATURE REVIEW

1. Besser,Gonzals,JG Bartlett:

A large amount of antibiotic prescriptions are unlikely to help patients in a clinical manner. The Centers for Disease Control & Prevention gathered a panel of physicians from the areas of infectious diseases, internal medicine, family medicine, and emergency medicine to develop a list of "Principles of Appropriate-Antibiotic Use for Treatment of Acute Respiratory Tract-Infections in Adults" because decreasing community use of antibiotics is a major strategy for preventing the rise in community-acquired antibiotic-resistant infections. These rules provide evidence-based suggestions for identifying and managing acute respiratory disorders in adults.

2. T.G. Sports Weidner.INT

Athletes may have acute impairment from upper respiratory ailments (URI) more often than from all other conditions combined. The main infectious, epidemiological studies, and transmission traits of URI are explained in this work. Healthcare professionals who treat athletes also need to be aware of the long-term consequences of URI on involvement in sports and physical activity. Although some investigations show frequent, intense exercise lowers the frequency and intensity of URI, other studies indicate that the body's immune system might need a certain amount of moderate exercise to function at its best.

3. Exerc Immunol. D Konig et al.

Moderate physical activity is believed to protect athletes from upper respiratory tract infections; however, epidemiological data indicates that protracted or severe exercise is linked to a higher prevalence of these illnesses. The relationship between immune system alterations and varying levels of exercise intensity has been the subject of numerous studies in recent years. The immunological responses that were highly consistent and repeatable following strenuous exercise included a reduction in natural killer cell activity, neutrophilia, and lymphopenia. however, other findings varied or were highly reliant on the study design and athletes who underwent investigation. Intriguing findings in the field of psychoneuroimmunology and fresh perspectives on the connection between the immune system and both micro and macro nutrients have recently prompted interest in new areas of study.

4. David C. Nieman, Caroline A. Macera, and Gregory W. Heath 14, 353–365, 1992: Competitive or recreational motivations have historically driven runners and other fitness lovers to engage in sports. Nonetheless, some people who exercise are certain that it will improve their health (Nash 1986). Longevity and a lower risk of cardiovascular disease been linked to regular physical activity and exercise (Paffenbarger et al. 1986; Powell et al. 1987). Furthermore, regular exercisers frequently claim other health benefits from endurance exercise, including stress reduction (Blumenthal et al. 1980; Sinyor et al. 1983), decreased weight (Heath et al. 1981), and increased energy (Hughes 1984). Additionally, many people who exercise think it increases their resistance to infection, and they anecdotally report that they have

5. Somerville Vaughan S., Braakhuis Andrea J., and Hopkins Will G. 488–497:in Advances in Nutrition 7 (3), 2016 Flavonoid molecules have immunomodulatory qualities, according to earlier studies on animals, although human data is still equivocal. In this systematic analysis, effectiveness of dietary flavonoids on immune function & upper respiratory tract infections (URTIs) in healthy persons was evaluated. MEDLINE, AMED, CINAHL, EMBASE and EMBASE classic, and the Cochrane Central Register of Controlled Trials were all searched using a specially developed search method. After screening the returning studies, two reviewers independently

56Van Niekerk, JP Journal of South African Medicine 94 (6), 475–482: The burden of antibiotic resistance is increased by the inappropriate use of antibiotics for upper respiratory tract- infections (URTIs), many of which are viral. Streptococcus pneumoniae, which causes the majority of instances of acute otitis media (AOM) and acute bacterial sinusitis (ABS), is becoming more resistant to antibiotics. Technique. To create a national guideline for treatment of URTIs, Infectious Diseases Society of Southern Africa convened a multidisciplinary meeting. Randomized controlled studies, current URTI guidelines, and regional patterns

of antibiotic susceptibility were among the background data examined. During the meeting, the first draft of the document was created. Members of the working group were given access to later drafts for revision.

7. BURDETTE FWARD, KATHERINE: All anesthetists should be aware of the architecture of the upper respiratory tract, but individuals who administer anesthesia for ENT surgery and for preparing the airway for fiberoptic intubation should pay particular attention. The vocal chords mark the end of the upper respiratory tract, which begins at the anterior nares (nostrils) and travels into the throat and nasal cavities. Through the Eustachian tube, its lateral branches create the middle auditory cleft, and the nose's lateral wall contains several ostia, also or holes, that link to the para-nasal sinuses.

8. Schroeder. Louis. M. D. : During the post-epidemic period, the rate of B. influenzae in the throats of healthy individuals was exactly as severe as it was during that period. For a while, it may stay in the larynx of healthy carriers. In accordance with Kolmer's results derived from complement fixation, phagocytosis, and agglutination tests, B. influenzae was the key etiologic agent, if not the bacterium liable for the disease's secondary infection. But insufficient proof been provided that B.

9. Haghi mehra, nesbitt henry: Here, we outline common commensal microorganisms that can maintain bacterial symbiosis and decrease pathobiont abundance in the upper respiratory tract. We also go over the potential and drawbacks of using localized probiotic formulations of commensal bacteria to lessen the frequency and intensity of viral infections.

10. Thomas K Amratha, J Jeestina george: As per the study, majority patients' antibiotic therapy does not involve sensitivity and culture evaluation, which can result in irrational medications with too much antibiotics delivered at inappropriate dosages and finally resistance.

III. AIMS AND OBJECTIVES

AIMS: To Assess Drug utilisation and evaluation of Drugs used in treatment of upper respiratory tract-infections in relation with age and other medical conditions.

OBJECTIVES:

GENERAL OBJECTIVES:

To assess the need of Drugs prescribed in the management of upper-respiratory tract diseases To know the analytical data of patients related with URTI

SPECIFIC OBJECTIVES:

To check which drugs is mostly prescribed

To evaluate the rational use of Drugs prescribed To analyses the appropriateness of prescription by Selection of Drugs in different clinical conditions Route of administration Associated drug used

IV. METHODOLOGY

Materials and Methods:

STUDY DESIGN: -

This is an observational study conducted at "KIMS HOSPITAL" for a period of 6 months.

The analytical data of individual's are included . The patients are included according to their interest and in order to carry out the study.

SAMPLE SIZE: -

The study sample of 200 subjects was collected from the IN-PATIENT department within the hospital.

COLLECTION OF DATA: -

All the suitable data will be collected from Patient Demographics

Clinical Examinations Prescription charts
Laboratory investigations Progress notes
Patient Medical Records

STUDY CRITERIA:

INCLUSION CRITERIA

The study includes if the subject satisfies the following criteria.

- Inpatient and outpatients
- Patients with other co-morbidities related to URTI
- Gender (males&females)
- All age groups are considered
- In-patients with case notes and laboratory investigations
- Outpatients

EXCLUSION CRITERIA:

- Pregnant and lactating women
- Pediatrics
- Emergency patients
- Patients who aren't willing to give their consent
- Incomplete information was excluded
- Illegal prescriptions are excluded

Duration of study:

The study was conducted over a period of six [6] months. Place of the study:
KIMS HOSPITAL, SECUNDERABAD

Statistical analysis:

Descriptive statistics will be implemented in this investigation. The patient data that has been recruited will be stored and analysed in a Microsoft Office Excel spreadsheet.

V.RESULTS

In Secunderabad, the KIMS Hospital collected 200 cases over a six-month period. The information collected was utilised to conduct the subsequent assessment.

Table 1: DISTRIBUTION BASED ON GENDER

GENDER	NO OF PATIENTS	PERCENTAGE (%)
MALES	116	58
FEMALES	84	42
TOTAL	200	100

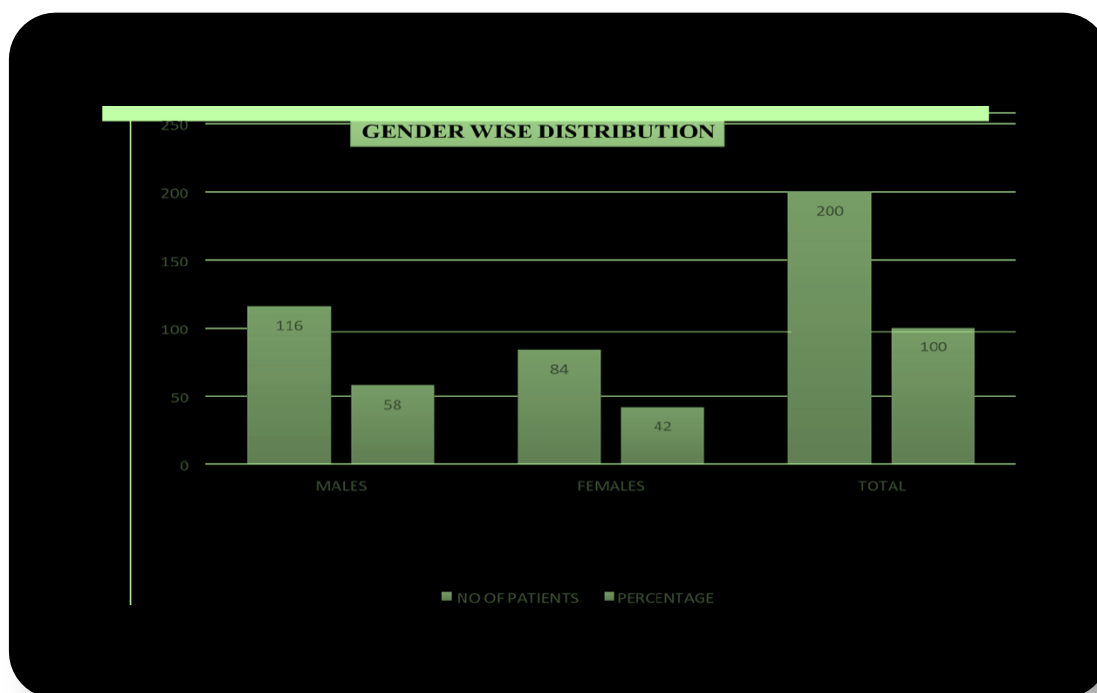


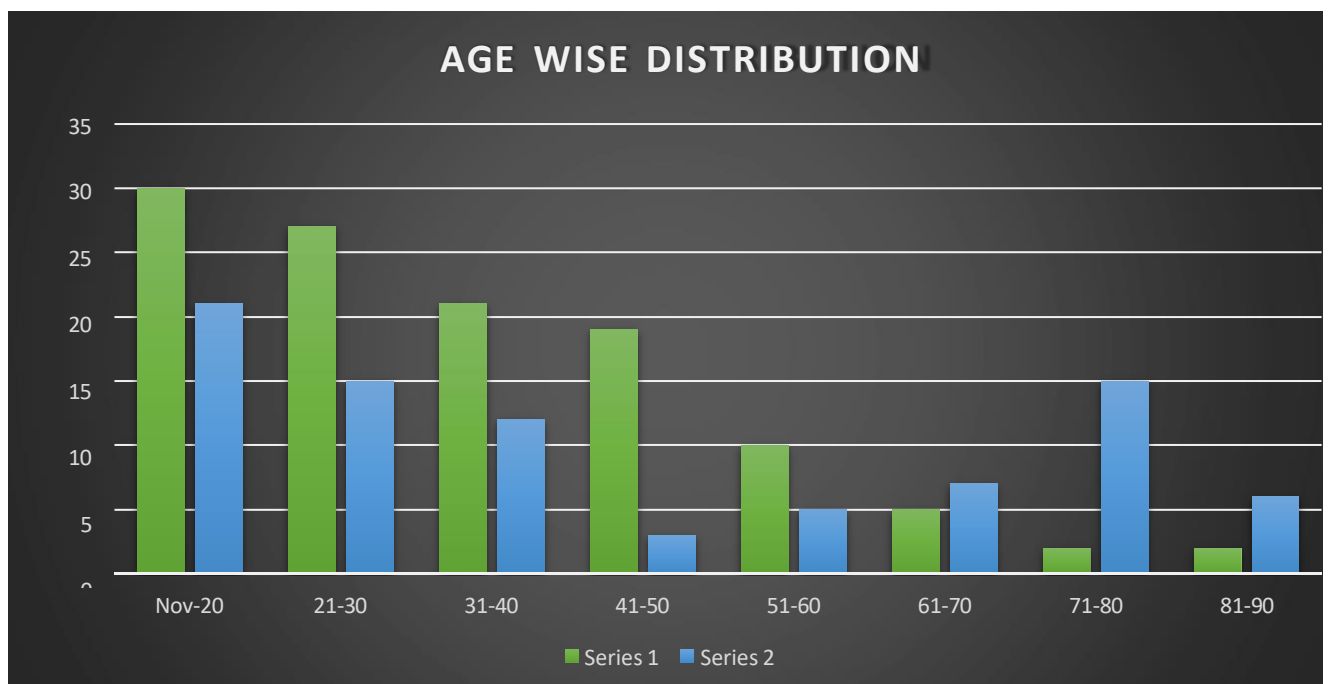
Figure 1 :GENDER WISE DISTRIBUTION

The research likely recruited a total of 200 participants, including 116 males & 84 females. Frequency of anti-inflammatory and anti-histamine treatment is higher among men (58%) than women (42%), when gender is considered as variable.

Table 2: DISTRIBUTION BASED ON AGE

Age groups	Males	Females
11-20	30	21
21-30	27	15
31-40	21	12
41-50	19	3
51-60	10	5
61-70	5	7
71-80	2	15
81-90	2	6

Figure 2 : AGE WISE DISTRIBUTION



Approximately 15% of patients are between ages of 11 and 20, while 13.5% are between the ages of 81 & 90. The age cohort of 81-90 was least represented.

Table 3: DISTRIBUTION BASED ON DRUG CLASSIFICATION

DRUG CLASS	NO OF PATIENTS	PERCENTAGE
ANTI HISTAMINES AND ANTI INFLAMMATORY	99	49.5
ANTIBIOTICS	86	43
OTHER DRUGS	15	7.5
TOTAL	200	100

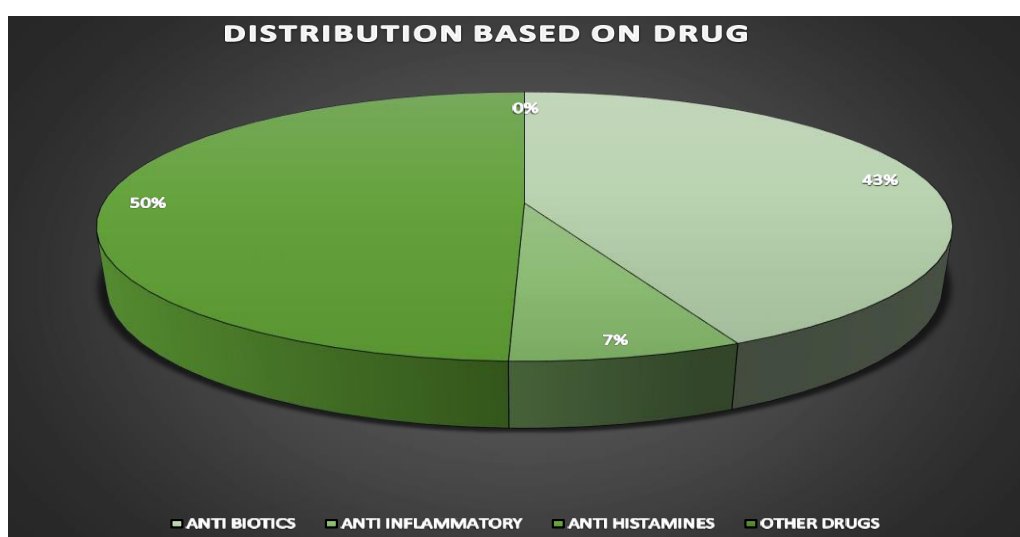


Figure 3: DRUG CLASS WISE DISTRIBUTION

Conferring to classification of the drug, out of 200 sample patients, 99 (49%) got anti histamines and anti inflammatory. Antibiotics 86 (43%), and other drugs 15 (7.5%)

Table 4: CLASS OF ANTIBIOTICS PRESCRIBED

Class of Antibiotics	No. of Prescriptions
Penicillin	120
tetracycline's	85
cephalosporins	27
others antibiotics	23

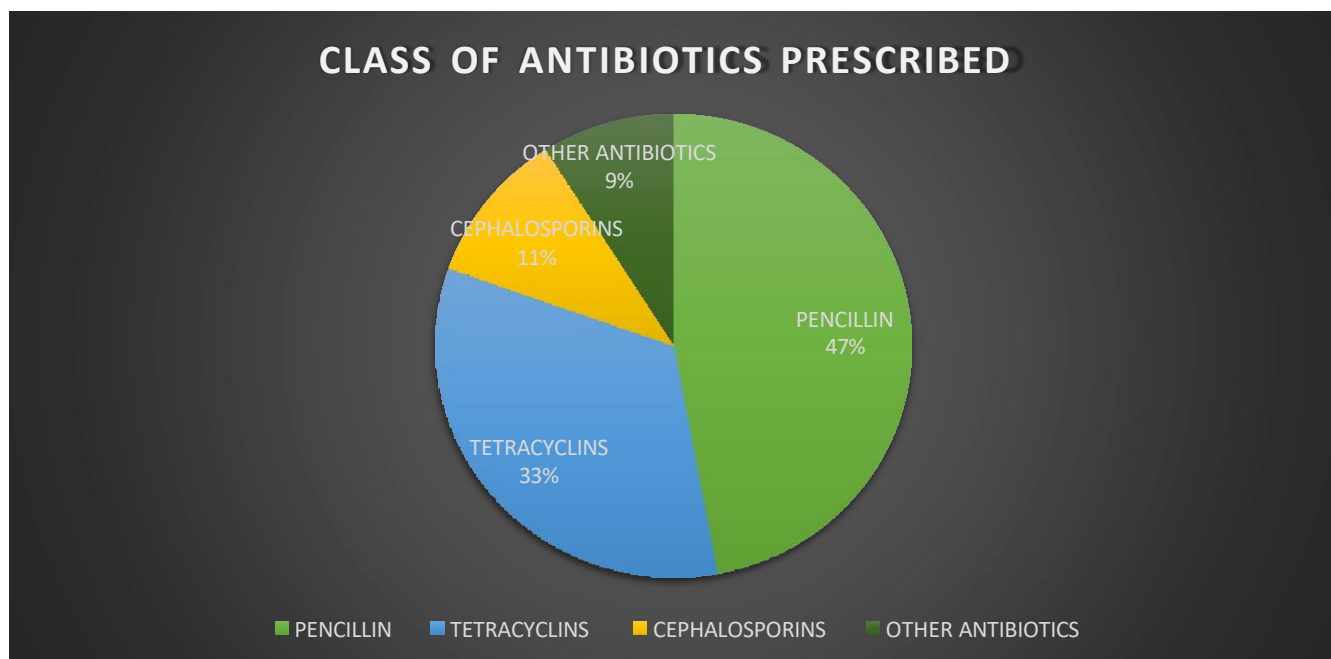


Figure 4: CLASS OF ANTIBIOTICS PRESCRIBED

In the management of lower respiratory tract-infections antibiotics like penicillin{55.5%} were mostly prescribed followed by tetracyclines{15%},cephalosporines{24.5%}.

Table 5: NUMBER OF DISEASES:

Number of Diseases	Number of Prescriptions
RHINITIS	58
TONSILITIS	49
SINUSITIS	26

PHARYNGITIS	23
LARYNGITIS	18
DIPHTHERIA	12

Out of 200 prescriptions 30% patients were diagnosed with rhinitis, 25.5% were tonsillitis, 13% were sinusitis, 13.5% were pharyngitis, 9.5% were laryngitis, 7% were diphtheria.

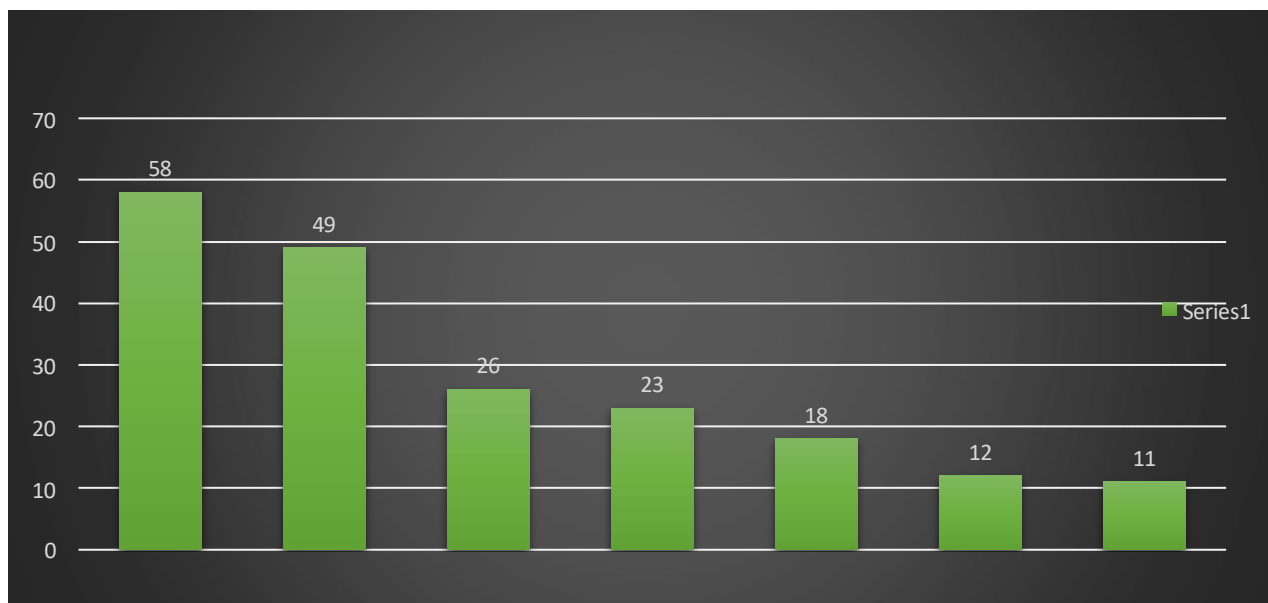


Figure 5: NUMBER OF DISEASES

Table 6: pattern of drug regimen prescribed

Therapy	Number
MONOTHERAPY	103
TWO DRUG THERAPY	64
> 2 DRUG THERAPY	24

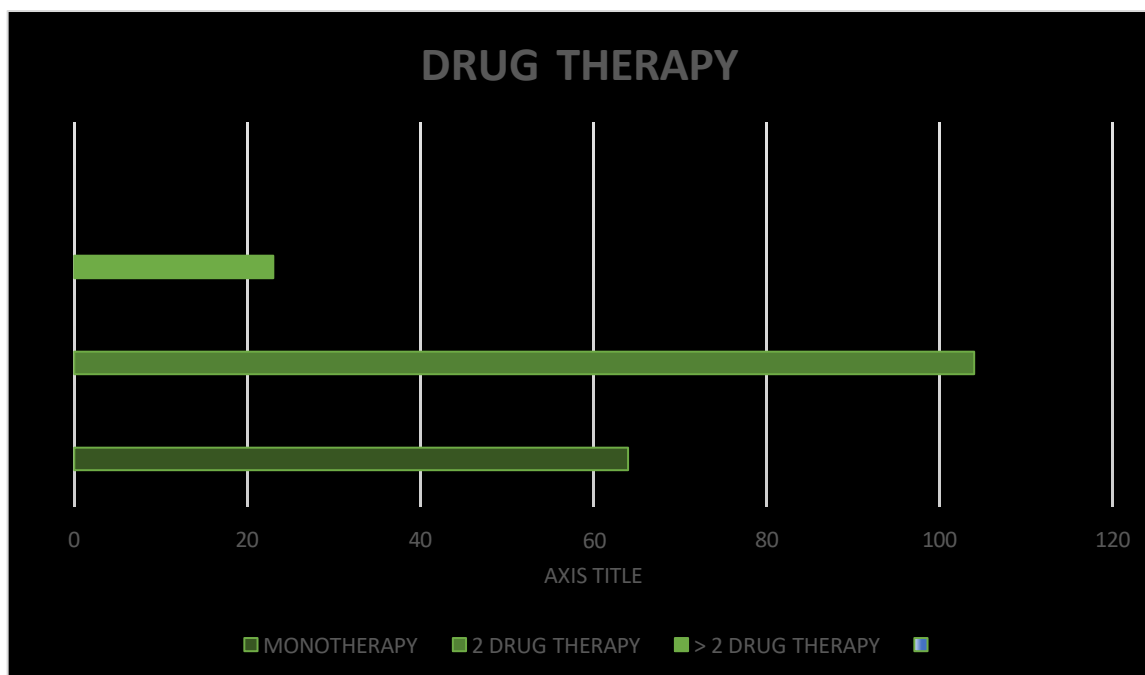


Figure 6: pattern of drug regimen prescribed

In management of URTI mono therapy was preferred having 51.5% of management rate, 32% of 2 drug therapy where as 12% with >2 drug therapy.

Table 7: DISTRIBUTION BASED ON DOSAGE-FORM

DOSAGE FORM	NO OF PATIENTS	PERCENTAGE
TABLET	85	42.5
CAPSULE	69	34.5
INJECTION		8
SACHET	2	1
TABLET+INJECTION	11	5.5
TABLET+CAPSULE	15	7.5
TABLET+CAPSULE+INJECTION	2	1
TOTAL	200	100

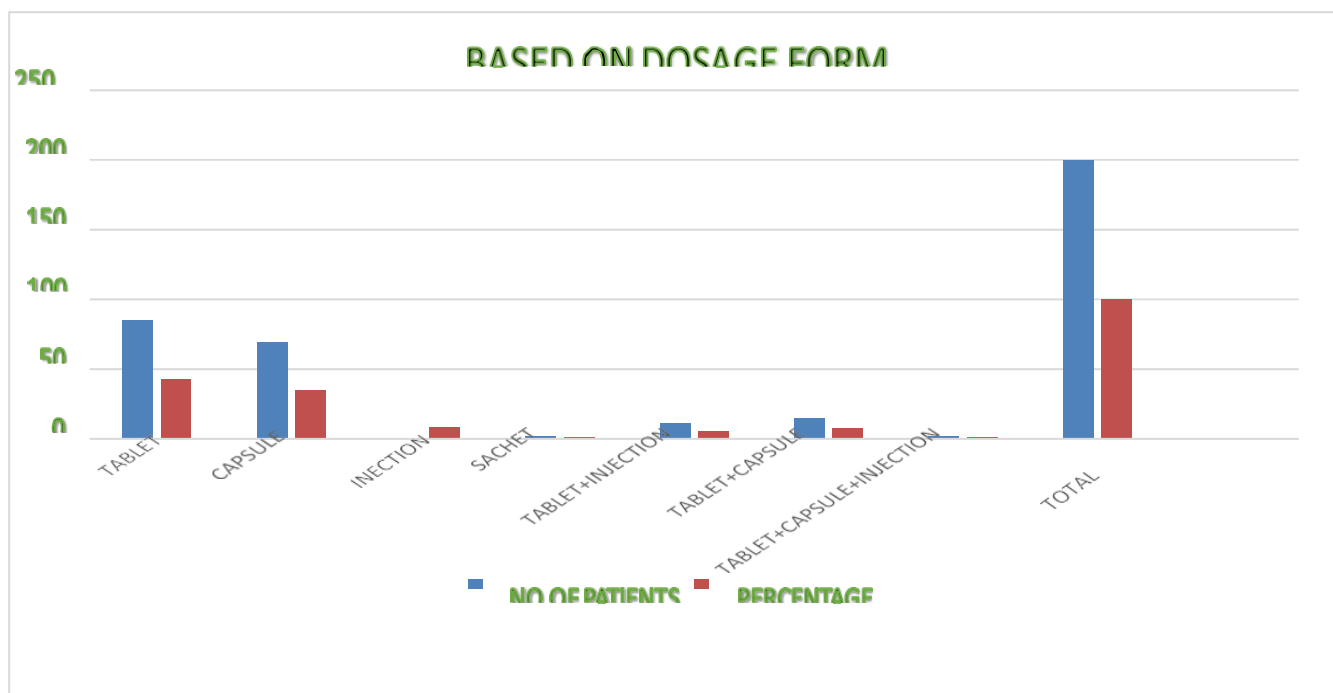


Figure 7: DISTRIBUTION BASED ON DOSAGE-FORM

The capsule ie85 is most frequently used dose type, accounting for 42.5% of 200 patients analysed. Prescription forms that are used the least are sachets, which account for 2% of the total.

Table :8 ROUTE OF ADMINISTRATION

ROUTE OF administration	No. of drugs
Oral	256
Parental	350

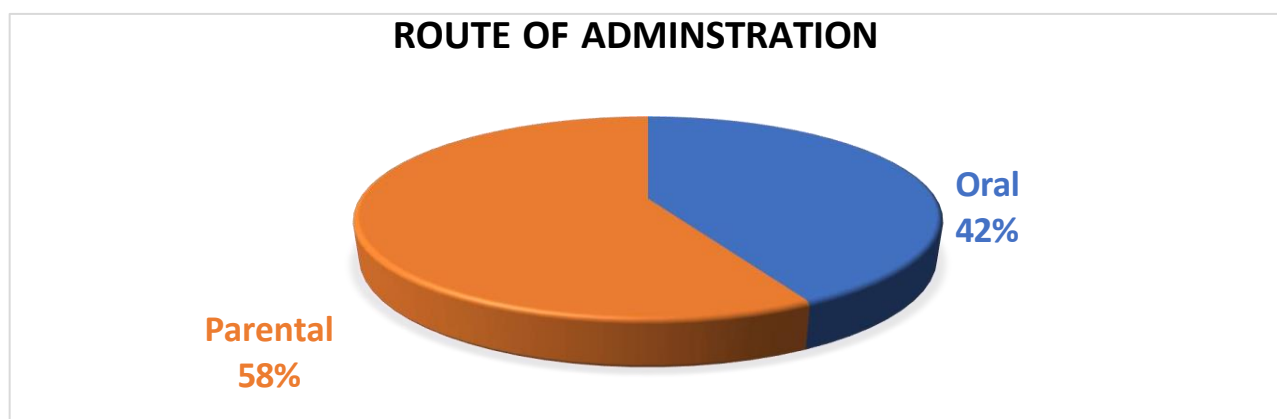


Figure 8:ROUTE OF ADMINISTRATION

TABLE 9: DISTRIBUTION BASED ON COMPLAINTS

COMPLAINTS	NUMBER PAITENTS	OF	PERCENTAGE %
FEVER WITH CHILLS	55		27.5%
RUNNING NOSE	48		24%
THROAT PAIN	32		16%
COUGHING	25		12.5%
NASAL CONJESTION	24		12%
OTHERS	16		8
TOTAL	200		100

TABLE 10: MOSTLY PRESCRIBED DRUGS :

DRUGS	NUMBER OF PATIENTS	PERCENTAGE %
AMOXICILLIN	36	18%
ACETAMONOPHEN	45	22.5%
NSAIDS	38	19%
CEPHALOSPORINS	22	11%
ANTI HISTAMINES	29	14.5%
ANTI TUSSIVES	12	0.6%
DECONGESTANTS	10	0.5%
MACROLIDS	8	4%
TOTAL	200	100%

T TEST:-

Age	Males (X1)	Females(X2)	x^2 1	x^2 2
11-10	30	7	900	49
21-30	8	2	81	4
31-40	11	3	121	9
41-50	9	5	81	25
51-60	18	6	324	36
61-70	21	10	441	100
71-80	27	10	729	100
81-90	8	6	64	36
	$\Sigma X_1=116$	$\Sigma X_2=84$	$\Sigma x^2 = 2564$ 1	$\Sigma x^2 = 1154$ 2

NULL HYPOTHESIS REJECTED

Discussion

This prospective, observational study investigated the appropriate utilisation of antibiotics, antihistamines, and anti-inflammatory medications in tertiary care settings, as well as patient prescription trends. The present investigation concentrated on the pulmonology department of the KIMS hospital in Secundrabad.

In the initial stages of respiratory tract infections, the inflammatory response is of paramount importance. A prompt treatment strategy that employs NSAIDS and a precise identification of the underlying cause may be able to manage the pathophysiological pathways that could exacerbate the illness, in addition to alleviating symptoms.

NSAIDS can be treated early to prevent the abuse of other medication types, such as antibiotics, which become ineffectual after the infection is recognised and whose inappropriate use results in resistance.

We are entirely satisfied with the review interaction and instructions, as the review displayed for the examination adhered to the prohibition and incorporation measures.

In order to focus on the prudent use of anti-inflammatory and anti-histamine medications and provide solution examples for the forthcoming perspective, a total of 200 instances were gathered, with the age range of 11 to 90 years.

In the patient example information assortment shapes that were assembled, objective and emotional evidence, patient profile information, evaluations, treatment plans, and outcomes were all included. from progress charts, evaluations, and additional data.

Age, sex, disease type, familial history, and objections are the factors that divide the data into sections.

Comprehensive information and dependable perspectives can be obtained from a variety of sources, including literature.

The investigation, which encompassed 200 cases, demonstrated that anti-inflammatory and anti-histamine medications comprise the majority of medications employed to treat UTRI. Antibiotics and partial medications are employed to provide temporary respite. 41% of the participants were female, while 59% were male.

Ages 11–20 (23.5%) and 21–30 (23.3%). The majority of the population, approximately 31– 40%, is

affected by upper respiratory tract infections.

This implies that the prevalence of anti-inflammatory and anti-histamine medications was higher among individuals aged 11 to 90.

A substantial proportion of the participants in our research had co-occurring disorders, such as DM (12%), DM and HTN (15%), HYPOTHYROIDISM (2%), CLD (1%) and HTN (18%).

Second-generation antihistamines are frequently and additionally administered to individuals with URTIs. The preponderance of anti-histamine predictors are between the ages of 11 and 20.

According to the report, capsules comprise 43.2% of all dosage forms utilised. Sachets are among the least frequently utilised dosage forms (2%).

Non-sedating antihistamines, which are second-generation antihistamines, are so named because, while they may induce lethargy in certain individuals, they typically do not.

Second-generation anti-histamines are less likely to induce adverse effects and medication interactions due to their focus on peripheral histamine receptors rather than the brain.

Although the majority of second-generation antihistamines do not induce drowsiness, a few do.

Antihistamines, anti-inflammatory medications, antibiotics, and other partial medications were administered to patients in accordance with the duration of their therapy. The maximum dosage was three days (43%), while the minimum was six days (3.3%).

based on the 200 patient data points that we have gathered. The majority of the patients who were admitted exhibited symptoms such as a high temperature, a hardened throat, difficulty swallowing, throat pain, and throat distress. Additionally, they were prescribed anti-inflammatory medications and antibiotics.

By analysing data from 200 patients, we determined that prescriptions were written with the most popular brand (14.5%) and the least popular generic name (4%).

The study included 200 participants, and the prescription patterns for antihistamines and anti-inflammatory medications were higher for two-drug therapy (22.5%) and antibiotics (18%), respectively, than for solitary treatment (18%), according to reports.

VI. CONCLUSION

The study findings indicates treatment of UTRI including different drug prescriptions for various complaints

Most of the patients treated with the care of complaints of fever, chills (27.5%), nasal congestion & inflammation (12%), throat pain (15%), running nose (24%), etc are included

The best therapy is personalizing the prescription to the patient budget to achieve effective control & unwanted side effects are antibiotics and antihistamines.

Our study which includes 200 samples provides emphasises the effects of pharmaceutical marketing, distribution, prescription and use in society on health, society and the economy

The prevalence of URTI is higher in men (58%)

These study outcomes often highlights potential benefits of URTI treatment in improving symptoms & individual responses

The main choice of therapy which was followed as mono therapy (51.5%) involves, anti inflammatory and anti histamines and antibiotics

The mostly prescribed drugs include antipyretics (22.5%), NSAIDS(19%), antibiotics(18%) Cephalosporins(11%), anti histamines (14.5%) .

The data collected maybe utilized by the medical practitioners and health care professionals to make clinical decisions in order to get the best treatment outcomes in patients with URTI

Thus by looking at drug prescribed, we can determine that goal of this research was to assess appropriate usage of drugs in treatment of URTI.

SUMMARY

Patient-demographics, medication histories, diagnosis & treatments were all included in data collecting sheets

In the context of upper respiratory tract infections (URTIS) drug utilisation and evaluation refers to the

methodical examination of how medications are prescribed and used for URTI's with the goal of identifying trends in appropriate antibiotic use, possible ADRS and general medication appropriateness in order to maximise patient care and reduce needless drug use, especially with regard to the overuse of antibiotics, which can lead to antibiotic resistance

Acetaminophen is mostly prescribed for treating minor-pains like cold and sore throats, And to reduction of fever

Amoxicillin is frequently prescribed for treating bacterial infections such as bronchitis and infections of throat.

Cetirizine is highly prescribed for temporary relieve for symptoms of high fever, sneezing, runny nose, itchy nose & throat, etc.

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