ACCEPTABILITY OF AZITHROMYCIN IN COMMUNITY-BASED INFECTIONS

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ABSTRACT

Prime reasons for good therapeutic activity and more potency antibiotics mostly preferable. Azithromycin is used to treat or prevent certain bacterial infections, most often those causing middle ear infections, strep throat, pneumonia, typhoid, gastroenteritis, bronchitis and sinusitis. In recent years, it has been used primarily to prevent bacterial infections in infants and those with weaker immune systems. Education was provided to all the out-patients and in patients. Structured patient education included about the disease, medication, lifestyle modifications required for the better management of the disease. In appropriate use of antibiotics leads to increased levels of bacterial resistance making it difficult to treat infections. Therefore, the aim of this study was to assess the prescription and use of antibiotic Azithromycin in 34 patients was monitored and compared with other antibiotics.

Key-words: Macrolide, Bacterial resistance, Prescription

INTRODUCTION

A simple set of instructions may motivate the patients to use their antibiotics appropriately. Studies have confirmed that adherence to their medication is one of the most important factors that determine the therapeutic outcomes, especially in patients suffering from chronic illness. Adherence to treatment and life style are the key links between treatment and its outcomes in medical care. Structural patient education may be defined as the learning process that improves patient’s ability to cope up with symptoms of the disease and make informed decisions regarding their disease and medication. Patient education is important in Indian setup because many patients are illiterate and come from low socio economic conditions.
background. Azithromycin is an azalide, a subclass of macrolide antibiotics. It is derived from erythromycin, with a methyl-substituted nitrogen atom incorporated into the lactone ring, thus making the lactone ring 15-membered. It prevents bacteria from growing by interfering with their protein synthesis.

**Methodology**

This study was carried out at outpatient and in-patient departments of Government General Hospital at Vijayawada and Dr. Pinnamaneni Siddhartha Institute of Medical Sciences & Research Foundation at Chinoutpalli. Patients with additional co morbidities like TB, Diabetes, Hyper/Hypotension, cardiac diseases, or any other chronic diseases were also included in the study. The present study aims at assessing Prescription Pattern of Antibiotic Azithromycin used in different infections based on, 1.Name, 2.Age, 3.Gender, 4.Occupation/Profession, 5.Disease, 6.Mention the season during which the disease occurred, 7.Antibiotic prescribed, 8.Dose/Strength, 9.Formulation used, 10.Brand name, 11.Are you a diabetic/asthmatic/hypertensive/ suffering from any other chronic/ acute illness?, 12.What is the treatment given?, 13.Any side effects (mild/moderate/severe) observed during treatment?, 14.Have you taken complete course of the antibiotic for the present infection(or) stopped in between?, 15.Specify reasons for discontinuation of medication?, 16.Are you relieved of the infection? and 17.The treatment given is satisfactory (or) not?.

**Therapeutic uses of Azithromycin based on case studies**

**Pneumonia:** It is an inflammatory condition of the lung—affecting primarily the microscopic air sacs known as alveoli. It is usually caused by infection with viruses or bacteria and less commonly other microorganisms, certain drugs and other conditions such as autoimmune diseases.

**Ear infections:** Ear infections are usually divided into those which occur in the ear canal (otitis externa) and those which occur in the small space behind the eardrum (the middle ear). Otitis externa, external otitis, or "swimmer's ear" involves the outer ear and ear canal. In external otitis, the ear hurts when touched or pulled.

Otitis media or middle ear infection involves the middle ear. In otitis media, the ear is infected or clogged with fluid behind the ear drum, in the normally air-filled middle-ear space. This very common childhood infection sometimes requires a surgical procedure called "myringotomy and tube insertion".
Otitis interna or labyrinthitis involves the inner ear. The inner ear includes sensory organs for balance and hearing. When the inner ear is inflamed, vertigo is a common symptom.

**Pharyngitis:** It is an inflammation of the throat\(^1\). In most cases it is quite painful, and is the most common cause of a sore throat\(^2\). Like many types of inflammation, pharyngitis can be acute – characterized by a rapid onset and typically a relatively short course – or chronic. Pharyngitis can result in very large tonsils which cause trouble during swallowing and breathing. It can be accompanied by cough or fever, for example, if caused by a systemic infection.

**Upper respiratory tract infections:** URI are the illnesses caused by an acute infection which involves the upper respiratory tract: nose, sinuses, pharynx or larynx. This commonly includes: tonsillitis, pharyngitis, laryngitis, sinusitis, otitis media, and the common cold\(^3\).

**Pertussis:** It is commonly called whooping cough. It is a highly contagious bacterial disease caused by Bordetella pertussis. In some countries, this disease is called the 100 days’ cough or cough of 100 days\(^4\). Symptoms are initially mild, and then develop into severe coughing fits, which produce the namesake high-pitched "whoop" sound in infected babies and children when they inhale air after coughing\(^5\).

![Figure 1: Cumulative frequency curve for Azithromycin](image-url)
Figure 2: Pie charts of Azithromycin for different diseases

AZITHROMYCIN        (NO OF CASES = 34)
Figure 3: No of patients completing/skip the medication

Figure 4: No of patients satisfactory or not

Figure 5: Different doses of tablets
RESULTS AND DISCUSSION

Comparison of use of Azithromycin with other antibiotics in the treatment of different diseases is shown in Fig.1. Based on cumulative frequency curve for Azithromycin, we noticed that Azithromycin was frequently used than other antibiotics in specified diseases.
Percentage of patients using Azithromycin and other antibiotics in various diseases are shown in Fig. 2. The percentage of patients using Azithromycin and other antibiotics in Pneumonia, Pharyngitis, Ear Infections, Upper Respiratory tract Infections, Pertussis are shown in Figures 2.1, 2.2, 2.3, 2.4, 2.5 respectively. Pie diagram in Fig. 2.1 shows that Azithromycin is most preferred antibiotic in treatment of pneumonia, as 50% of the patients used this antibiotic, the remaining antibiotics Moxifloxacin and Ciprofloxacin shared 40% and 10% respectively. Fig. 2.2 shows that the preference for Azithromycin (73%) in treatment of Pharyngitis was 2.7 times more than Clarithromycin (27%). Pie chart in Fig. 2.3 shows that when compared to Cephalosporin’s and Penicillin’s Azithromycin was preferred in treatment of Ear Infections. The percentage of patients using Azithromycin was 36% whereas the percentage of patients using Amoxicillin, Cephalexin and cefdinir was 34%, 16% and 14% respectively. The preference for use of Azithromycin in UTI is depicted in the pie chart of Fig. 2.4. In the treatment of UTI, Azithromycin was preferred 3.5 times more than Amoxicillin, 1.4 times more than Sulfamethoxazole and 1.2 times more than Doxycycline. Pie chart in Fig. 2.5 compares the use of Azithromycin with other Antibiotics in treatment of Pertussis. In the treatment of Pertussis, Azithromycin was most preferred antibiotic among the tested drugs. 70% of the patients used Azithromycin whereas Erythromycin and Clarithromycin shared 20% and 10% respectively. Percentage of people completing or discontinuing the course is shown in Fig. 3. According to the case study of Azithromycin, which included 34 patients those completing the course were 32 and discontinuing the course were 2. 93.75% patients continued the treatment until they were completely cured. Only 6.25% patients discontinued the treatment due to various reasons.

Percentage of patients satisfied with the treatment compared with those who were not satisfied by the treatment is shown in Fig. 4. Based on case study People satisfactory of the treatment were 32 and not satisfactory were 2. No. of patients using different doses of Azithromycin tablets is shown in Fig. 5. Patients using 500mg-20 and 250mg-11. No. of patients using different doses of Azithromycin capsules is shown in Fig. 6. Patients using 500mg-2 and 250mg-1.

Among the 34 patients selected for the study some of them were found to have additional comorbidities. This is depicted in Fig. 7. Details are Asthma-3 patients, Diabetes-4 patients, Hypertension-3 patients, Heart problems-2 patients, Hypotension-1 patient, both heart
problem and hypotension-1 patient, both hypertension and diabetes -1 patient and No diseases -19 patients.

CONCLUSION
In the present study Based on study of Azithromycin, due to its advantageous pharmacokinetic profile, seems the best option when antibiotic prophylaxis is considered in epidemiological settings. It has been proved effective in closed community-based infections.

ACKNOWLEDGEMENTS
The authors are very much thankful to Management and Principal of KVSR Siddhartha College of pharmaceutical sciences, Vijayawada for their support and constant encouragement.

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