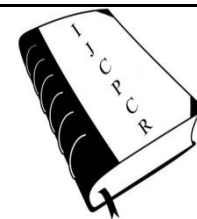




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## **A STUDY ON PRESCRIPTION PATTERN OF ANTIBIOTICS IN A HOSPITAL IN INDIA**

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### **ABSTRACT**

**Introduction:** By promoting the rational use selection of ideal antimicrobials by their dose, duration and route of administration, the coordinated interventions programme can be successfully implemented in any health care hospital. Antimicrobial resistance (AMR) which has been a worldwide threat is also considered as a critical public health care parameter. It was reported in some studies that use of high cost antibiotics with high generation may lead to more adverse reactions. Thus, preventing the occurrence of AMR is the best way to oversee the problems of antibiotics. It is also reported that about 20-30% of total drug expenditure is due to excessive use of antibiotics. **Materials and Methods:** Study was carried out in a population of about 220 patients prescribed with antimicrobials in respect with infectious cause of clinical condition. Study was carried out in RVS Multi-specialty Hospital, Chittoor District, Andhra Pradesh, India. The study was carried for about 3 months in all the departments of the hospital. Institutional Ethics Committee has approved for the study in the respective hospital. Before starting of the study all the health care professionals were educated about the alarm problem of AMR worldwide and the steps that are to be taken to overcome them. **Results and Discussion:** Among 238 patients discharged from various departments of the hospital in particular from infectious ward, 176 patients have been noted to be prescribed with antibiotics. Antibiotics were observed to be prescribed in various clinical conditions like community acquired pneumonia (CAP), urinary tract infection (UTI), aspiration pneumonia, wound infection, Gastroenteritis, Bacteremia, cellulitis, respiratory tract infection (RTI). **Conclusion:** From the present study conducted, it can be concluded that respiratory tract infection and community acquired pneumonia are of great clinical indications found in the area of study. Among various antimicrobials used, clarithromycin and augmentin followed by piperacillin are of greater used antibiotics in the hospital settings. The tertiary health care hospital is following a systematic pattern of prescribing the antibiotics based on its own hospital formulary. However, steps should be taken for conducting patient surveillance studies on antibiotics use regularly for better use of appropriate antibiotics, thereby preventing AMR in population.

**Key words:** AMR, WHO, resistance, Piperacillin, UTI, RTI.

### **INTRODUCTION**

By promoting the rational use selection of ideal antimicrobials by their dose, duration and route of administration, the coordinated interventions programme can be successfully implemented in any health care hospital[1-4]. Antimicrobial resistance (AMR) which has been a worldwide threat is also considered as a critical

public health care parameter[5]. It was reported in some studies that use of high cost antibiotics with high generation may lead to more adverse reactions[6,7]. Thus, preventing the occurrence of AMR is the best way to oversee the problems of antibiotics. It is also reported that about 20-30% of total drug expenditure is due to excessive

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use of antibiotics[8-11]. 20-50% of antimicrobials is questionable and inappropriate in many health care sectors especially in developing countries[12]. Linking the pattern of drug use to surveillance has been proven to be a best way to make political campaigns on resistance of antimicrobials which was also supported by world health organization (WHO)[13].

**MATERIALS AND METHODS:**

Study was carried out in a population of about 220 patients prescribed with antimicrobials in respect with infectious cause of clinical condition[14]. Study was carried out in RVS Multi-specialty Hospital, Chittoor District, Andhra Pradesh, India. The study was carried for about 3 months in all the departments of the hospital. Institutional Ethics Committee has approved for the study in the respective hospital[15]. Before starting of the study all the health care professionals were educated about the alarm problem of AMR worldwide and the steps that are to be taken to overcome them[16]. All the data required for the study are retrieved from the individual case reports from the nursing station of any department. Any queries arise are there and then questioned and cleared by the health care professionals available at the point.

**RESULTS AND DISCUSSION:**

Among 238 patients discharged from various departments of the hospital in particular from infectious ward, 176 patients have been noted to be prescribed with antibiotics. Antibiotics were observed to be prescribed in

various clinical conditions like community acquired pneumonia (CAP), urinary tract infection (UTI), aspiration pneumonia, wound infection, Gastroenteritis, Bacteremia, cellulitis, respiratory tract infection (RTI). The frequency of antibiotics use in various infectious diseases were represented in the TABLE 1.

It was observed from the study that infectious diseases are more probably followed by prescription of antimicrobials in almost all the cases. Among 176 cases who were prescribed with antibiotics, community acquired pneumonia were of 43 in number with a percentage of 24.41%, aspiration pneumonia was of 28 in number with percentage ranging at 15.9%, respiratory tract infection was in about 40 cases with 22.72%, UTI accounted for 20 cases with 11.36%, wound infection was in 6 people with 3.40%, bacteremia in 6 cases with 3.40%, gastroenteritis in 8 patients with 4.54% and cellulitis was in 25 with 14.20% of overall study population prescribed with antibiotics as a therapeutic approach.

Among all the cases of infectious diseases followed by prescription of antibiotics community acquired pneumonia and respiratory tract infection are of high incidents with antibiotic use with 43 and 40 cases prescribed with antibiotics respectively. Different types of antibiotics like piperacillin, augmentin, clarithromycin, ceftriaxone, levofloxacin, azithromycin, cefuroxime are found to be in flow of use in the hospital were the study is carried out. All the data on type of antibiotic used and its frequency are given in the TABLE 2.

**Table 1: Infections For Which Antibiotics Were Prescribed**

Infection diagnosed	Frequency (N)	Percentage (%)
Community acquired pneumonia	43	24.41
Aspiration pneumonia	28	15.90
UTI	20	11.36
Wound infection	6	3.40
Gastroenteritis	8	4.54
Bacteremia	6	3.40
Cellulitis	25	14.20
Respiratory tract infection	40	22.72

**Table 2: Type of Antibiotic Used AD Its Frequency**

Antimicrobials Prescribed	Frequency (n)	Percentage (%)
Piperacillin	32	18.6
Augmentin	35	19.8
Clarithromycin	36	20.5
Ceftriaxone	32	18.2
Levofloxacin	17	9.6
Azithromycin	16	9.1
Cefuroxime	8	4.2

**CONCLUSION:**

From the present study conducted, it can be concluded that respiratory tract infection and community

acquired pneumonia are of great clinical indications found in the area of study. Among various antimicrobials used, clarithromycin and augmentin followed by piperacillin are

of greater used antibiotics in the hospital settings. The tertiary health care hospital is following a systematic pattern of prescribing the antibiotics based on its own hospital formulary. However, steps should to taken for

conducting patient surveillance studies on antibiotics use regularly for better use of appropriate antibiotics, thereby preventing AMR in population.

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