

Pattern of use of Amoxicillin and Penicillin in Upazila Health Complex of Bangladesh

Hoque ANMN¹, Zaman R², Hoque ME³

Abstract:

Upazila health complex is one of the most important part of the government health service system. Most of the in Bangladesh live in rural area. A cross sectional descriptive type of study was conducted at the upazila health complex with the objective to determine the pattern of use of antibiotic in upazila health complex of Bangladesh. The study was conducted to determine Amoxicillin and Penicillin indented and dispersed in the upazila health complex in the last five years. The study has been provided with checklist as a data collection tools and from the hospital records of the store keeper. The store keeper has been interviewed. A focus group discussion with the doctors of that upazila health complex has been conducted to take their opinion regarding the pattern of use of antibiotics. There were sixteen types of antibiotics were being indented and dispersed in various amount. The amount of antibiotics were varied from year to year due to demand of the hospital. There were 40% Amoxicillin and 10% Penicillin used in the year of 2012. 90% of Amoxicillin and Penicillin are used in outdoor and 8% in indoor and 2% in emergency department of selected upazila health complex. Based on the results of this study, it can be concluded that the amount of indented and dispersed of different types of antibiotics in the upazila health complex of Bangladesh greatly varied.

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Introduction:

Bangladesh is a developing country with more than 75% of population of the total population living in rural areas containing 82% of the total poor people. About 36% of the population continue to live below the national poverty line. Basic needs of living particularly health and education remain largely unmet and only less than 40% of the population has access to basic health care (Islam, 2006; WHO, 2006)¹.

The administration of primary health care by Bangladesh government is carried out through a surprisingly extensive infrastructure of facilities within each of the 64 districts. The districts are divided into 485 upazilas which are subdivided into unions. Each union consists of approximately 25000 people and health services are directed by the Ministry of Health and Family Welfare (MOHFW)². The upazilas consisting of unions, represent the rural areas

of the country. Primary health care service is offered from the union levels called 'Union Health Centers'.

In response to WHO's essential drugs concept such as access to essential medicines, quality of all medicines and rational use of drugs (WHO, 2003), Bangladesh pioneer a National Drug Policy (NDP) in 1982. Main objectives of this policy were to ensure easy accessibility to essential drugs with affordable price, standard quality of drugs through appropriate prescribing and dispensing by the health care professionals (Islam, 2006)⁴.

Despite the fact that majority of the population live in rural areas, the government health care system remains a very minor source of health care there (Roy, 1997)⁵. Treatments in the rural areas are mainly (about 45%) provided by unqualified health personnel including medical assistants, mid-wives, village doctors, community health workers in comparison to that by qualified medical graduates (only 10-20%) (Ahmed, 2005)⁶. Unskilled personnel are less aware of the deleterious effects of inappropriate antibiotic use. Over prescribing and inappropriate prescribing are very common in the country due to unethical practices of both health professionals and drug manufacturers (Ahmed, 2003)⁶.

Unqualified drug sellers offer alternative drugs when the prescribed drugs are out of stock or refill prescription without consulting the prescriber (Kigotho, 1997; Dua et al, 1994)⁷. A high proportion of patients in some developing

1. Dr. A. N. M Nazmul Hoque, BDS, MS, MCPS, MPH, Assistant Professor (Conservative Dentistry), Sylhet MAG Osmani Medical College.

2. Dr. Rokeya Zaman, BDS, MS, Assistant Professor, Comilla Medical College.

3. Professor Dr. Md. Emdadul Hoque, Professor & Head, Department of the Nutrition & Biochemistry, NIPSOM, Mohakhali.

Address of Correspondence: Dr. A.N.M Nazmul Hoque, Assistant Professor (Conservative Dentistry), Sylhet MAG Osmani Medical College. E-mail: mn.kodalia@gmail.com Mob: 01712242260

countries are treated by untrained practitioners simultaneously with oral and injectable antibiotics administered with contaminated needles and syringes (Rahman et al, 1998) for misdiagnosed noninfectious diseases (Fagbule and Kalu, 1995). In most developing countries including Bangladesh, antibiotics can be purchased without prescription, even when the practice is not legal. Drug vendors usually have little or no knowledge of required dosage regimen, indications, or contraindications (Goel et al, 1996; Hakk, 1988)¹¹. Based on the prevailing situation and practice, the present survey was conducted to have a sight at the severity of the situation while putting forward some recommendations in this regard.

The Directorate of Drug Administration (DDA) under the Ministry of Health and Family Welfare, Government of the People’s Republic of Bangladesh, is the drug regulatory authority of the country. Mission of the DDA is to ensure that the common people have easy access to useful, effective, safe and good quality essential and other drugs at affordable price. To test the quality of pre-registration and post marketed drugs and medicines, there are two government Drug Testing Laboratories in the country, one in Chittagong under the direct administrative control of the DDA and the other in Dhaka under the control of the Institute of Public Health (IPH) of the Directorate General of Health Services⁸.

Methodology:

It is a descriptive type of cross sectional study. The study was carried out at the upazila health complex of Doulotpur, Manikganj in Dhaka division. Antibiotics of Amoxicillin and Penicillin was indented and dispersed in that upazila and the service provider. A check list and a focus group discussion were prepared at the beginning of the study. The has been provided with check list or data collection tools and from the hospital records of the store keeper. In upazila health complex, a store keeper has been interviewed. Data have been collected record from the store keeper about indented antibiotics. Data have been also collected record from the pharmacist of the upazila health complex about the amount of dispersed antibiotics. A focus group conceptual structure was created to serve as the basis for the focus group discussion.

After completion of data collection, those were checked, verified and edited for consistency to reduce error. Data were analyzed to simple descriptive statistical analyses including frequency distribution, mean, standard deviation

and percentage. The results were fashioned in tubular form, graphical presentation and explained according to the findings.

Results:

After collection of data, results were prepared in tubular and graphical form and the following observations were made:

Table-I
Amount of Amoxicillin indented and dispersed

| Year | 2008 | 2009 | 2010 | 2011 | 2012 |
|-----------|--------|--------|--------|--------|--------|
| Indented | 14,460 | 23,000 | 15,000 | 41,000 | 44,000 |
| Dispersed | 25,000 | 17,000 | 11,000 | 11,000 | 42,500 |

Table shows that amount of amoxicillin indented and dispersed. Indented amoxicillin in one year is increased and in another is decreased. Same time dispersed of amoxicillin dependant on demand of patient.

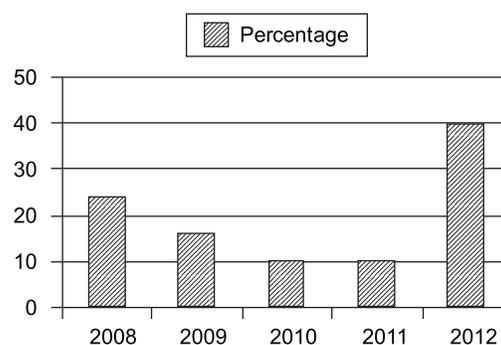


Fig.-1: Pattern of use of Amoxicillin

Figure shows the pattern of use of amoxicillin. In 2008 (24%), in 2009 (16%), in 2010 (10%), in 2011 (10%), in 2012 (40%).

Table-II
Amount of Penicillin indented and dispersed

| Year | 2008 | 2009 | 2010 | 2011 | 2012 |
|-----------|--------|--------|--------|--------|--------|
| Indented | 12,500 | 12,000 | 12,000 | 25,000 | 10,000 |
| Dispersed | 23,000 | 7,100 | 8,000 | 10,500 | 6,000 |

Table shows that indented and dispersed of penicillin in 2008, 2009, 2010, 2011 and 2012 increased and decreased according to demand of the hospital.

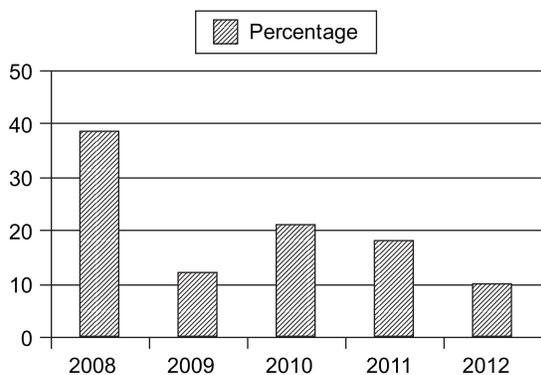


Fig.-2: Pattern of use of Penicillin

Figure shows the pattern of use of Penicillin in the last five years. 39%, 12%, 21%, 18% and 10% respectively in the year of 2008, 2009, 2010, 2011 and 2012.

Discussion:

The pattern of use of Amoxicillin and Penicillin in this survey of a rural community of Bangladesh, are generally similar to an earlier survey done on an urban population in Bangladesh. The major reason for not buying the prescribed number of antibiotics was financial.

Amount of Amoxicillin indented and dispersed were varied. Indented Amoxicillin in one year was increased and in another year was decreased. Same time dispersed of Amoxicillin also increased and decreased. So it indicates that indented and dispersed of Amoxicillin dependant on demand of the patient.

In my study it was found that the indented and dispersed of Penicillin in 2008, 2009, 2010, 2011 and 2012 increased and decreased according to the demand of the hospital.

Conclusion:

Based on the results of this study, it can be concluded that the amount of indented and amount of dispersed of different types of antibiotics in the upazila health complex of Bangladesh greatly varied. There is a gap between amount of indented and amount of dispersed of different types of antibiotics. Greater commitments are required from

the drug regulating authority to ensure effective and sound antibiotics management and utilization mechanisms.

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