Nigerian Journal of Pharmaceutical Research
Vol. 8 No 1 pp. 242 – 246
(September 2010)

ANTIBIOTIC USAGE PATTERN BY THE PUBLIC IN YENOGOA LOCAL GOVERNMENT AREA OF BAYELSA STATE, NIGERIA

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Abstract

The misuse of antibiotics is frequent especially in resource limited settings. The use of antibiotics by the public in Yenogoa Local Government Area, Bayelsa State was surveyed using pretested self-administered questionnaires. Thirty-nine (39%) of the respondents self-medicate, 44% sourced antibiotics from patent medicine stores, markets and drug hawkers, while 18% use antibiotics for treating common cold. Antibiotic regimen was never completed by 71% of the respondents; 25% skipped doses and only 42% use medical laboratory services before antibiotic use. Public education on the appropriateness and limitations of antibiotics is imperative to ensure they are obtained from the right sources and utilized rationally.

Keywords: Antibiotic use, public, regimen, and self medication.

INTRODUCTION

Synthetic and naturally obtained antibacterial drugs are called antibiotics (CDCP, 2009; Chambers, 2006). Their availability and utilization since 1940 have reduced morbidities and mortalities resulting from bacterial infections and diseases (Rang *et al.*, 2003). In Nigeria, most drugs including antibiotics are available over-the-counter without doctor's prescription (Haruna, 2004) and antibiotics remain the most commonly used and misused of all classes of drugs (Pechere, 2001; Jones and Pannell, 1977). This has often resulted in the emergence of resistant organisms, thus limiting the effectiveness of all known antibacterials (Kunin, 1983; Jolene, 2005; Ehinomen, 2006). This development is of great concern especially in resource limited settings because of the impact on the cost, complications and outcomes of treatment (Ehinomen, 2006). Although there are studies on antibiotic and antimicrobial use in few States in Nigeria, (Agbaje and Uwakwe, 2003)

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ISSN 0189-8434

there is none for Yenogoa, Bayelsa State, Nigeria. This study is intended to close this gap. It is my hope that it will also provoke efforts to educate the public on the appropriateness and limitations of antibiotics use.

MATERIALS AND METHODS

Study Area

The location of the study was Yenogoa Local Government Area (L.G.A) in Bayelsa State, Nigeria. People from different tribes, religions, literacy and social classes made up the population. There were limited health care facilities and registered pharmacies. Other sources of drugs included patent medicine vendors and drug hawkers. This study used random sampling technique and covered males and females not less than 12 years.

Research Instrument

Structured, pretested questionnaires were randomly distributed to different categories of people not below 12 years of age in the L.G.A. Four hundred copies of the questionnaire were given out. Respondents were encouraged to complete the questionnaires on the spot. However, allowances were made for collection of completed questionnaire not later than 24 hours. The data were analyzed using descriptive statistics.

RESULTS

Of the four hundred questionnaires distributed, three hundred and eighty-seven were properly completed and retrieved, giving a compliance rate of 96.75%. The modal age was 25 years and 54% of the respondents were males (Table I).

The level of self medication by the respondents was 39% compared to 51% of antimicrobial use based on prescription. About 8 and 2 percent of the respondents use antibiotics based on recommendation by friends and relatives, and advertisement respectively.

About 45% of the respondents sourced their antibiotics from patent medicine stores, markets and drug hawkers (Table II). Antibacterials were misused in the treatment of viral (18%) and non-infective ailments such as pain (1%) and worm infestation (2.6%).

Furthermore, the study showed 71% of the respondents do not complete their antibiotic dosage regimen and compensation approaches included combining missed dose with the next one (6.6%), use of antibiotics when remembered (22%); skipping of the doses (49%) and starting the treatment course afresh (15%).

About 26% of the respondents would prefer to use new antibiotics and only 42% utilize medical laboratory services before antibiotic use.

DISCUSSION

Antibiotics, though prescription-only medicines, are usually obtained without prescription in Nigeria (Haruna, 2004). This positively correlates with the level of self medication (30%) found in the study. Most health care consumers usually indulge in self-medication with drugs previously prescribed by doctors when the same symptoms re-occur, or when they fall into similar health conditions to which they first presented to the doctor (Obaseki-Ebor *et* al., 1987).

Most antibiotics are sourced from illegal places (patent medicine store (27%) open market (11%) and hawkers (7%). Sixty percent of the antibiotics in the street markets in Nigeria are of

good quality, 33% have been reported to be either substandard or worthless,

Table I: Socio-demographic characteristics

		Frequency (n)	%
1	Age Distribution (years)		
	12-19	78	20.2
	20-29	201	51.9
	30-39	63	16.5
	40-49	25	6.5
	50-59	9	2.3
	> 59	11	2.8
2	Sex Distribution		
	Male	210	54.3
	Female	177	45.7
3	Occupation		
	Student	188	48.6
	Trading	45	11.6
	Civil Servant	86	22.2
	Others	68	17.6
4	Education Level		
	Never went to School	2	0.5
	Primary	6	1.0
	Secondary	218	56.3
	National College of Education (NCE)	26	6.7
	Polytechnic	41	10.6
	University	94	24.3

Table II : Attitudes of respondents to antibiotic use

1	Determinants of antibiotic choice		
-	Doctor's prescription	198	51.2
	Self medication	150	38.8
	Recommendation by friends and		
	Relatives	30	7.8
	Advertisement	9	2.3
2	Sources of antibiotics		
	Registered pharmacy	215	55.6
	Patent medicine store	103	26.6
	Drug hawker	25	6.5
	Open Market	54	11.3
3	Reason for use		
	Therapy	204	52.7
	Prophylaxis	130	33.6
	Both	53	13.7
4	Antibiotic commonly used		
	Ampiclox capsule	158	40.8
	Amoxil [amoxicillin] capsule	33	8.5
	Ceftriaxone	33	8.5
	Ciprofloxacin	11	2.8
	Penicillin G	1	2.8
	Septrin tablet	43	11.0
	Streptomycin injection	2	0.5
	Tetracycline	23	5.9
4	Ailments treated with antibiotics		
	Common cold	70	18.1
	Pain	4	1.0
	Pyrexia	20	5.2
	Inflammation	30	7.8
	Infection	183	47.3
	Worm infestation	10	2.6
	Wounds	65	16.8
	Others	5	1.3
5	Adherence strictly to regimen	114	29.5
	Do not complete regimen	273	70.5
6	Compensatory methods for non-adherence		
	Combining missed dose with the next one	18	6.6
	Use the antibiotic when remembered	60	22
	Skip doses	134	49
	Start the treatment course afresh	42	15
	Others	19	7
7	Preference for New Antibiotics (Bosu and Sgoti, 1997)		
	Yes	102	26.4
	No	285	73.6

8	Use of medical laboratory service before antibiotic use		
	Yes	162	41.9
	No	225	58.1

while 7% contained dangerous quantities of drugs or something else (Ifudu, 1989). Wrong sources of antibiotics could lead to incorrect choice and dosing error, wrong frequency of administration or use of either excessive or sub-therapeutic dose, practices that result to emergence of resistant microbial strains (APUA, 2009). Also, though antibiotics is one of the safest classes of drugs used in medical practice, excessive intake could lead to toxicities, including seizures (e.g. penicillin), vestibular damage (e.g. amino glycosides) and renal failure (e.g.; amino glycosides) especially in patients with impaired drug excretion or metabolism (Gulielmo, 2001). About 70% of people with hearing impairment in China developed their condition due to adverse reactions to drugs and up to 40% of all adverse reactions to drugs in China involve antibiotics (Health Report, 2004).

The present study showed that 71% of the respondents do not complete antibiotic regimen. Bachman *et al* reported 84% noncompliance with doxycycline therapy for Chlamydia-associated syndromes (Bachman *et* al., 1999), while in Nigeria, only 15% of antibiotic consumers purchased full treatment regimens (NIAID, 2006); in many cases people did not buy their full treatment regimen because they could not afford it. Some patients will purchase full treatment regimen but will save part for future use, while some stop treatment when they get well and will not complete the treatment (Pechere, 2001). The therapeutic implication of failure to complete the prescribed duration of antibiotic treatment or skipping doses is that the blood level of the drug may not remain high enough to inhibit the growth of the least sensitive member of the bacterial population. If these less sensitive organisms then have a chance to grow, they will give rise to a population that is not as sensitive as the original, therefore promoting the emergence of resistant strains (Nester *et* al., 2004).

Certain infections do not respond to treatment with antibiotics (Bosu and Afori, 1997). This study showed that about 18% of the respondents use antibiotics for the treatment of common cold. About 75% and 79% of out-patients and in-patients respectively, are given antibiotics for common cold in a Chinese hospital (Health Report, 2004). Common cold is due to viral infection and is usually self limiting, requiring no antibiotic. Also, short duration of pyrexia in the absence of localized signs is probably associated with undefined viral infections; antibiotic therapy is unnecessary.

This study also showed that about 58% of the respondents use antibiotics in the absence of supporting microbiological data. Bacterial cultures and Gram Stains should be regarded in the selection and application of antibiotic therapy. Frequent use of drug combinations or drugs with the broadest spectra is a cover for diagnostic imprecision (Chambers, 2006). This study showed that ampiclox, a broad spectrum antibiotic is the most commonly used antibiotic in Yenogoa Local Government Area. The broader the antibiotic spectrum and the longer the period of antibiotic treatment, the greater is the alteration in the normal microflora, and the greater is the possibility that a single,

typically drug-resistant microorganism will become predominant.

CONCLUSION

A high percentage of the public in Yenogoa appeared to obtain antibiotics from wrong sources, indulge in self-medication and use antibiotics for wrong reasons.

Also, antibiotic use in the absence of supporting microbiological data and non-adherence to regimen were high.

There is need to educate the public on the proper use and sourcing of antibiotics in order to ensure they are obtained from the right sources and utilized rationally.

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