Knowledge, Attitude and Practices Towards Antibiotic Use Among Patients at a Tertiary Urology Centre in Trinidad and Tobago

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ABSTRACT

Aim and Objectives

To investigate the knowledge, attitudes and practices towards antibiotic use among patients attending a tertiary referral urology unit in south Trinidad. We aimed to investigate the general level of awareness of antibiotics as well as identify patterns of antibiotic misuse which could potentially lead to antibiotic resistance.

Results

150 patients were evaluated. Most patients (75.5%) were aware that antibiotics are used to treat bacterial infections. 57.9% also believed that antibiotics may be used to treat viral infections. 48.4% were aware of the potential deleterious effects of antibiotics on the body's normal flora while 78% were aware of the concept of antibiotic resistance. 28.9% reported using antibiotics without a prescription. Overall, 23.3% reported having done so for a fever or cold while 12.6% did so for urinary symptoms. 68 persons (42.8%) stopped their antibiotics prior to completion of the course duration with most (76.5%) indicating that they did so because they felt better.

Conclusion

This study demonstrates that while most patients were aware of issues surrounding the use of antibiotics, a significant percentage still harboured several misconceptions. Also, high rates of self-medication with antibiotics were noted, among several worrying patterns of usage.

INTRODUCTION

Antibiotics are among the most commonly prescribed drugs and their misuse by both patients and physicians has led to resistance.[1][2] Multidrug resistant organisms have been linked to over 20,000 deaths annually in the United States[3] and has been estimated to be 2 to 3 times worse in developing countries.[1] Trinidad and Tobago, an island nation of 1.3 million, has not been spared and there is the anecdotal belief that antibiotic misuse remains widespread. As urologists, it is now increasingly common for us to encounter multidrug resistant bacteria in day to day practice. Indeed, we have recently noted a high incidence of ciprofloxacin resistant E. *coli* in our unit.[4] This has potentially dire consequences, not just for the individual patient, but the entire populace.

This study is the first such attempt to document knowledge and practices towards antibiotic use and misuse among patients seeking urologic care. Confirming that there is indeed a problem is the first step in effecting change. The information gathered will subsequently be used to direct educational activities aimed at our patients.

AIM

To investigate the knowledge, attitude and practices towards antibiotic use among patients attending a tertiary referral urology unit in South Trinidad. We aimed to investigate the general level of awareness of antibiotics as well as identify patterns of antibiotic misuse which could potentially lead to drug resistance.

MATERIALS AND METHODS

This was a hospital based cross-sectional and descriptive study and was conducted in the Urology Clinic of the San Fernando General Hospital. While our department is in Southern Trinidad and has a catchment population of approximately 600,000, we see patients from throughout Trinidad and Tobago.

Data were collected using a structured questionnaire designed by the authors specifically for this study. There were three sections on the questionnaire: demographics, seven questions on knowledge and nine questions on practices. The questionnaire was interviewer-administered by trained research assistants. All participants were asked to give written informed consent indicating their willingness to participate in the study. Permission was obtained from the Bio-Ethics Committee of the South-West Regional Health Authority.

A pilot phase was used to adjust questions which were considered vague and these data were not included in the final analysis. Being a mostly descriptive study, a study population of 150 was arbitrarily chosen based on attendance at the clinics. Participation was voluntary and participants were randomly selected. Data were compiled in Microsoft Excel and analysed using SPSS Version 21. Results were displayed using descriptive statistics.

RESULTS

Demographics

159 patients were interviewed, including 105 men (66%) and 54 women (34%). The mean age of the study population was 58.2 years (Range 20-83, Std. dev 14.8). 66% were male and the majority (56%) had only a primary education. Most patients (59.7%) were from South Trinidad, with the remainder evenly distributed between the Northern, Eastern and Central regions of the island. Overall, 44.7% reported having used antibiotics at least once during the last six months.

Knowledge of antibiotics

Most patients were aware that antibiotics are used to treat bacterial infections; -75.5% answered in the affirmative while 8.2% said 'no' and 16% were unsure. However, 57.9% also believed that antibiotics may be used to treat viral infections. 48.4% were aware of the potential deleterious effects of antibiotics on the body's normal flora while 78% were aware of the concept of antibiotic resistance. Participant responses to questions assessing their knowledge of antibiotics are summarized in Table 1.

Antibiotic practices

Antibiotic use among the cohort is summarized in Table 2. 46 patients (28.9%) indicated using antibiotics without a prescription. Overall, 23.3% reported having done so for a fever or cold while 12.6% did so for urinary symptoms. With regards to the source of unprescribed antibiotics, 30.4% reported having self prescribed and a similar number (30.4%) reported using antibiotics given to them by family members/friends. Antibiotics were prescribed by

Table 1 - Participants basic knowledge of antibiotics

	Yes (n,%)	No (n,%)	Unsure (n,%)
Antibiotics are used to treat bacterial infections	120(75.5)	13(8.2)	26 (16.3)
Antibiotics are used to treat viral infections	92(57.9)	39 (24.5)	28(17.6)
Antibiotics can kill the body's normal bacteria	77 (48.4)	13(8.2)	69 (43.4)
Overuse of antibiotics may lead to decrease in effectiveness of the drug	124 (78.0)	10 (6.3)	25 (15.7)

Table 2 - Patterns of antibiotic use among study participants

	Yes (n, %)	**No (n,%)**
Used unprescribed antibiotics	46 (28.9)	113 (71.1)
Used antibiotics for UTI	20 (12.6)	139 (87.4)
Used antibiotics for cold	37 (23.3)	122 (76.7)
Kept unused antibiotics at home	55 (34.6)	104 (65.4)
Gave away unused antibiotics	8 (5.0)	151 (95.0)
Stopped antibiotics prematurely	68 (42.8)	91 (57.2)

pharmacists in 26% of cases (Fig. 1).

34.6% reported keeping "leftover" antibiotics at home but only 5% admitted giving leftover antibiotics to a relative or friend. 68 persons (42.8%) stopped their antibiotics prior to completion of the course duration with most (76.5%) indicating that they did so because they felt better. 14.7% indicated that they prematurely terminated their course of antibiotics because they disliked taking medication while only 3% did so because of side effects (Fig 2).

DISCUSSION

To the best of our knowledge, this is the first study in Trinidad to assess the knowledge, attitudes and practices towards antibiotic use in a urology practice. We hope that it will be the preliminary steps in formulating a patient education program as part of a larger strategy aimed at curbing the threat of antibiotic resistance. This is particularly important as we have already seen high levels of multidrug and extended drug resistant organisms in our local urology practice.[4] Our study highlighted several practices which may have contributed to these high levels of resistance in the Trinidadian population.

One practice which has been described as contributory to antibiotic resistance is indiscriminate use and in particular, use of unprescribed antibiotics.[5][6] In our study, high rates of self-medication were noted—28.9% admitted to using antibiotics without a prescription. This is similar to work done by Awad and colleagues in Kuwait where the rate of self-medication was 27.5%.[7] In a Jordanian study, the prevalence of antibiotic self-medication was noted to be 40.7% [5] while Napolitano et al noted that one-third of Italian patients reported self-medicating.[8] This has been noted to vary geographically, being much lower in Europe and Malaysia.[7] Around a quarter of our patients who self-medicated reported taking antibiotics at the advice of a pharmacist and this highlights the important role of a team approach in curbing antibiotic resistance. These findings have been noted by other authors and has been found to be as high as 97% with participants citing convenience, familiarity

Figure 1 – Source of antibiotics which were not prescribed by a doctor

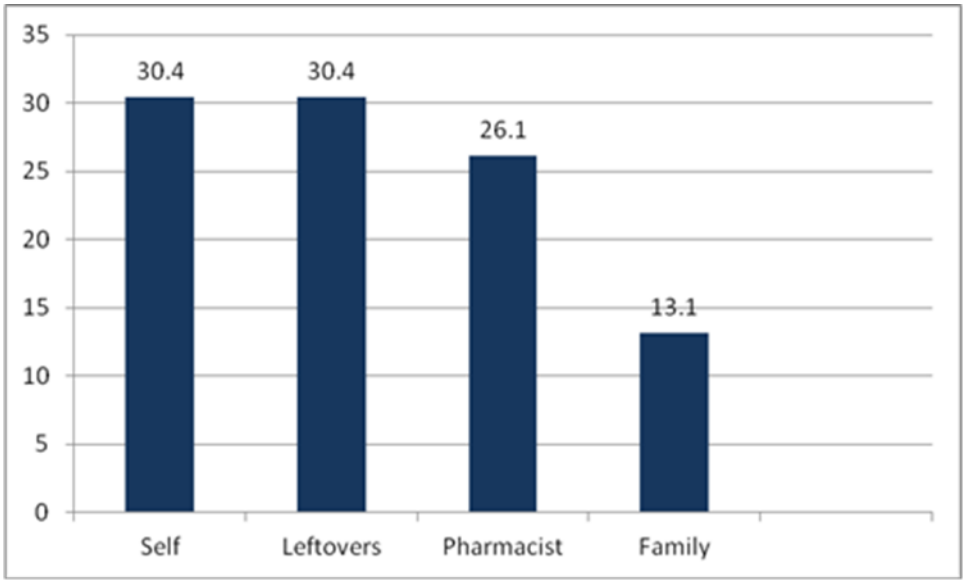
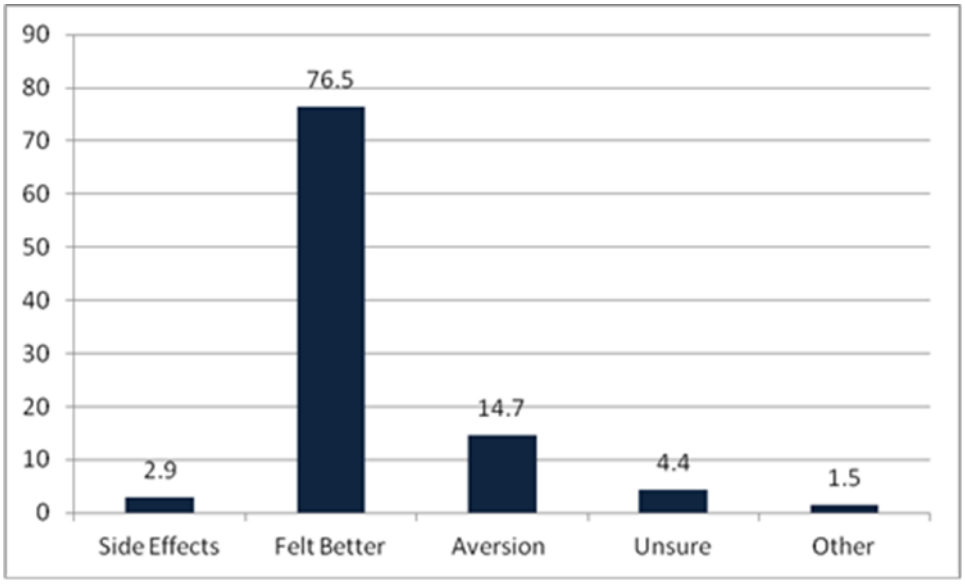


Figure 2 - Participants' reason for stopping antibiotics prematurely



with previous treatment as well as minor severity of symptoms as potential reasons for seeking the help of a pharmacist. [7][9][10]

In a study of 770 individuals in Kuwait, poor knowledge about antibiotics was noted with 46% agreeing that antibiotics are effective against viruses.[7] Similarly, 58% of those surveyed in our study indicated that antibiotics were used to treat viral infections, and this could perhaps explain the significant number of patients who use antibiotics for coughs and colds. Several authors have noted that university education was associated with an increased likelihood to self-medicate with antibiotics.[7][11] [12] This is an interesting finding and while our study was not powered to investigate this association, it would make for an intriguing hypothesis for future research.

In our study, 42.8% of participants prematurely terminated their antibiotics prior to the completion of a full course, most commonly, because they felt clinically improved. Inadequate dosing, indiscriminate antibiotic and premature completion of therapy have contributed to antibiotic resistance[6] and this is likely to be the case in Trinidad and Tobago. Just over one-third indicated that they kept leftover antibiotics at home but, reassuringly, only 5% reported giving antibiotics to relatives or friends.

The proportion of persons sharing antibiotics with others has been noted to be much higher by other authors.[7]

We are aware that this is a small study and one which was conducted among a very specific population—urology patients. This limits our ability to extrapolate to a general population. We, therefore, hope to build on this study in the future. Also, a significant factor in antibiotic misuse relates to physician prescribing patterns—this was not evaluated in our study and we intend to investigate this in the future.

CONCLUSION

This study demonstrated that, whilst most patients were knowledgeable on the use of antibiotics, a significant percentage harboured several misconceptions. High rates of self-medication and other inappropriate usage patterns were identified. There is clearly a need for more patient education and better antibiotic stewardship if we are to overcome the growing scourge of drug-resistant organisms.

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