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Assessing Compliance Towards Antibiotics in Terms of Knowledge, Belief and Behaviour in Patients Undergoing Endodontic Therapy - A Questionnaire Based Survey

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Abstract

Background: Factors related to antibiotic use, medication non-adherence, resistance, and safety have been well established in literature around the world. Never less than a few dental studies with references of patient compliance with antibiotics have been performed; antibiotics being amongst the common drug prescribed in day-to-day endodontic practice. The purpose of this pilot questionnaire survey was therefore to evaluate the knowledge, behaviour and belief in antibiotic medication.

Materials and Methods: A questionnaire survey was conducted in a group of 250 individuals visiting the department of Conservative Dentistry & Endodontics consisting of questions based to assess knowledge, belief and behaviour towards antibiotic medication. Statistical analysis for the obtained results was done using Mann-Whitney U test and Kruskal Wallis test.

Results: Majority of the respondents showed appropriate knowledge, belief and behaviour towards antibiotic medication. However, a significant number of respondents were either unaware/not sure or had the wrong knowledge, belief or behaviour towards the antibiotic medication.

Conclusion: Based on the finding of this pilot survey, it can be concluded that even though a majority of the respondents are aware of the course of antibiotic medication, however, there still is a significant number of individuals lacking it. Hence, improved awareness of the population in terms of hazards of misuse, drug

resistance, self-medication etc need to be addressed. Use of antibiotics in dentistry is common, assessing the patient's awareness regarding the correct use of antibiotic medication hence becomes crucial.

Keywords: antibiotic misuse, drug resistance, self-medication

Introduction

Since most human orofacial infections originate from odontogenic infections, [1] the prescribing of antibiotics by dental practitioners has become an important aspect of dental practice.[2]

Dentists prescribe between 7% and 11% of all common antibiotics (beta lactams, macrolides, tetracyclines, clindamycin, metronidazole).[3] Hence, it becomes imperative to know the knowledge, behaviour, belief and the possible cause of non- adherence of the patient towards antibiotics. Inappropriate use results from various factors and causes adverse effects including the emergence of resistance, adverse reactions, treatment failure, and waste of resources.[4]

Non-compliance with antibiotic treatment is a common phenomenon and this could definitely have an adverse impact on the success rate of treatment.[5-8]

Studies conducted elsewhere have demonstrated inappropriate practices such as sharing of antibiotics,[9, 10]and the use of left-over antibiotics.[10,11]Also, the purchase of antibiotics without valid prescriptions is quite prevalent in many countries.[12,13]

At times, inappropriate use of these agents reaches an extent that reports from a study conducted in Jordan revealed that antibiotics were used as analgesics and good number of people uses them as a prophylactic agent against infections.[10]

The lack of knowledge of medication such as antibiotics may greatly influence the probability of misuse or compliance.[9] There are reports of general lack of knowledge of correct antibiotic use and a lack of public awareness on the basic principles of antibiotic use, as well as indication for therapy. [14, 15] Further, education should focus on improving patients' understanding of antibiotic regimens.[9]

Thus, this survey seeks to assess patient knowledge, beliefs and behaviour of the patients seeking endodontic treatment. The findings of this study would be a useful addition to establish literatures on the subject and could provide valuable data on appropriate antibiotic usage which could provide the basis for educational campaigns, addressing errors among the patients.

Materials and Methods

The ethical clearance for the survey was obtained from the Institutional Ethics Committee of AB Shetty Memorial Institute of dental sciences, Mangaluru, Karnataka. This survey was based on a 9-item questionnaire developed for the stated objective and was carried out in the department of Conservative Dentistry and Endodontics, AB Shetty Memorial Institute of dental sciences, Mangaluru, Karnataka. The questionnaire was built on the basis of previous studies[9-11, 15-18] and was carried out using a cross sectional design. It consisted of three sub-scales designed to determine antibiotic use-related awareness/knowledge (4 questions), belief (2 questions) and behaviour (3 questions).

A pilot study was also performed on 20 participants to ensure that the questionnaire among prospective respondents was sufficient and detailed. Since the respondents reported no inherent difficulties in understanding and responding to the questionnaire, the same questionnaire was used without any major changes. However, the data collected from the survey's pilot part were excluded from the final analysis of data.

The inclusion criteria consisted of members between the ages of 18-60, who were neither healthcare professionals

nor students from any field related to medicine / health. Participants who could understand the term antibiotic met additional criteria. Knowledge-related questions were designed to assess participants ' basic knowledge; whereas the belief section focused on respondents ' belief in the use of remaining antibiotics and the need for compliance in terms of duration and dose; and the behaviour section attempted to determine respondents ' behaviour towards compliance with the duration of the course of treatment and the dose.

Designed in English, the questionnaire was also translated into the two regional languages to facilitate data collection. It also included an element to obtain demographic information and a signed informed consent was obtained upon agreeing to participate in the survey.

The data from the completed questionnaires was evaluated for various parameters and statistical analysis was done using Mann-Whitney U test and Kruskal Wallis test.

Results

A total of 250 questionnaires were obtained. The characteristics of the respondents are presented in Table 1.

Comparatively there were higher percentage of males, with the respondents mainly belonging in the age group of 31-45 years. A majority of respondents fell into the category of having completed secondary education (34.4%). Most of the respondent's earnings ranged between 1 lakh -5 lakh rupees/year (59.2%).

Responses to questions assessing the knowledge, behaviour and beliefs and possible cause of non-compliance of the respondents are represented in the form of bar graphs from Figure1- Figure 4.

Figure1 depicts the patient response in terms of knowledge towards antibiotic medication

- 16% said that a missed dose could be taken with the next dose.
- 9.2% said that the antibiotic could be taken before the meal
- 25.6% were unsure of whether antibiotics are used for treating infections
- 22% said that antibiotics could be purchased without a doctor's prescription

Figure 2 depicts the behaviour patients towards antibiotic medication,

- 31.2% stated of not finishing/completing the course of antibiotic medication
- 34.4% mentioned of missing the dose during the course of medication
- 31% agreed to purchasing antibiotics without a prescription

Figure 3 depicts the belief of patients towards antibiotic medication,

- 16% believe that the same antibiotic prescribed can be used again for similar symptoms without the doctor's prescription
- 37.2% believed that it was okay to stop the antibiotic course if they felt better from the complaint symptoms.

Table 1:

		Frequency	Percentage
Age group (in years)	18-30	78	31.2
	31-45	108	43.2
	46-60	64	25.6
Gender	Male	164	65.6
	Female	86	34.4
Educational Qualification	No Formal Education	38	15.2
	Primary education	63	25.2
	Secondary	86	34.4

	education		
	Higher Education	63	25.2
Income	<1 lakh/year	24	9.6
	>1 lakh/year	86	34.4
	>5 lakh/year	62	24.8
	>10 lakh/year	23	9.2
	unemployed	55	22.0

Figure 1:

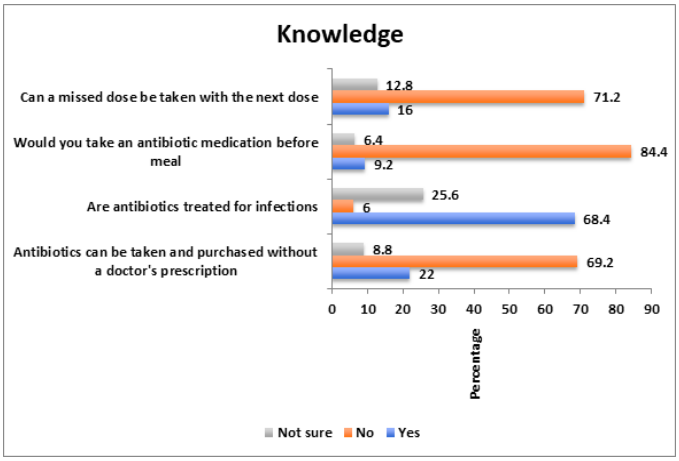


Figure 2:

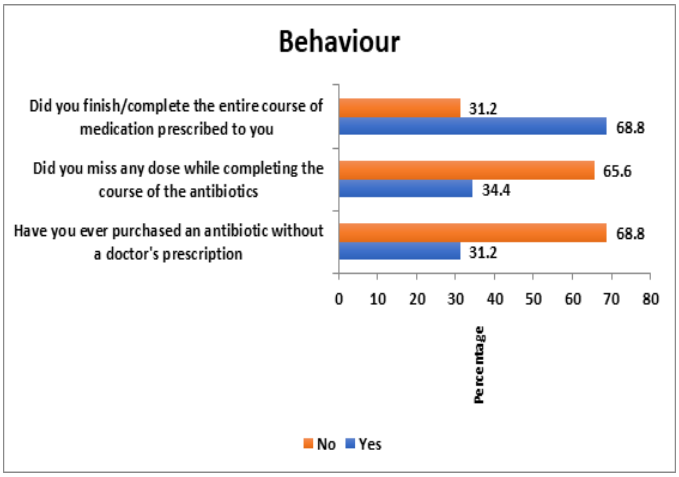
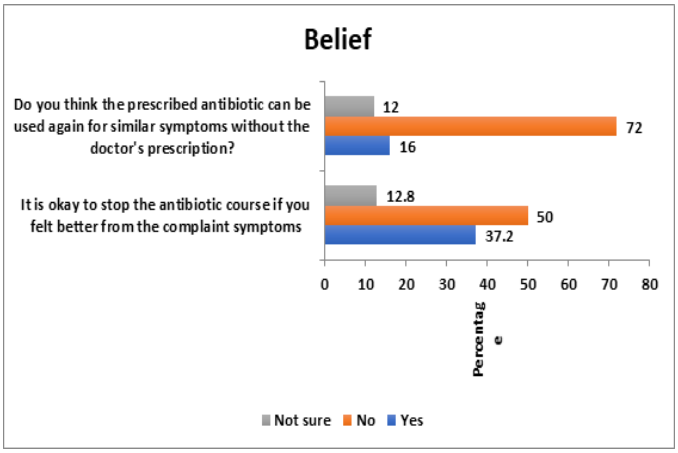


Figure 3:



Discussion

Knowledge, attitude and belief system regarding antibiotic therapy among the residents of many countries including India has only been studied to a limited extent.[10,20] Therefore this study aimed to reflect patient's perception towards antibiotic medication visiting the department of Endodontics.

Antibiotics are often prescribed in day-to-day practice in Endodontics. Antibiotics may be given systemically or regionally during endodontic care to achieve an aseptic setting. Although, lately there has been a shift with respect to antibiotic consumption, there has been a general awareness regarding antibiotic resistance. Since dentists prescribe approximately 10% of antibiotics dispensed in primary care, it is important not to underestimate the potential contribution of the dental profession to the development of antibiotic resistant bacteria .[19]

Because antibiotic use in India is driven by both prescription and self-medication, education campaigns and behaviour change communication tactics to combat antibiotic overuse and abuse are required. Antibiotics are subject to specific control in terms of licensing, sales, and prescription, but their effectiveness has not been systematically reviewed; more study is needed to fill this knowledge gap.[20]

To minimise patient expectations of antibiotics and improve understanding of antibiotic resistance, a dramatic shift in prescribing practice, accompanied by a nationwide adult information campaign, is required.[10]

As per the results of this questionnaire survey, a majority of respondents are aware of the course of antibiotic medication, however, there still is a significant number of individuals lacking it. One of the major issues noted in this survey is the participant's behaviour towards antibiotic medication, more than 30% of the participants mentioned that they either did not finish the entire course of the prescribed medication or either missed a dose or purchased the medication without a doctor's prescription. In terms of belief, 37.2% of respondents believed that they could stop/discontinue the antibiotic medication if they felt better from their complaint symptoms.

Shehade et al suggested a number of fundamental keystones for controlling anti-biotics misuse and sub sequent antibiotic resistance in a population: 1) Creating adult education programmes that use a variety of media relates to infections that necessitate antibiotic treatment and high lighting when antibiotics are ineffective, 2) By enforcing strong medication rules, we may regulate the avenues through which anti-biotics are obtained. 3) ensure that the patient follows the treatment plan, 4) high lighting the pharmacist's duty and importance in preventing the selling of anti-biotics without a prescription, 5) All of these principles, as well as consultation tactics and guide lines that make patient expectations explicit without jeopardising the physician–patient relationship, may help to prevent un necessary anti-biotic use.[10]

Public or patients have multi factorial know ledge, conviction and behaviour that varies according to the population or region. Therefore, to initiate any kind of effective intervention, an understanding of the beliefs, knowledge and behaviour related to the use of anti-biotics in a particular population is required.

As the use of antibiotic medication in endodontics is not very un-common, there is hence a need to assess the patient adherence towards the same. This would help to avoid a possible treatment failure and most importantly the effect of bacterial resistance.

Conclusion

Antibiotic misuse, self -medication and drug resistance are some of the major issues that are prevalent in several regions of India. Antibiotics being a common drug prescribed by Endodontists, it becomes important for dentists to understand the patient's attitude and awareness regarding antibiotic medication. According to findings of this study, it is well understood that a significant number of people still lack knowledge and practice or might practice incorrect use of antibiotics. By working on better communication skills and making the patient understand the importance of following the ideal course of antibiotic use, a dentist or a practitioner could avoid treatment failure and also perhaps help in curbing the issues of drug resistance.

Limitations of the study

This survey was a pilot survey with a limited sample size. An increased sample size along different regions of the country could facilitate more significant findings and help identify prevailing issues regarding antibiotic misuse.

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References

1. Dar-Odeh N, Ryalat S, Shayyab M, Abu-Hammad O. Analysis of clinical records of dental patients attending Jordan University Hospital: documentation of

drug prescriptions and local anesthetic injections. Ther Clin Risk Manag. 2008;4(5):1111–1117

2. Laskin DM, Laskin JL. Odontogenic infections of the head and neck. In: Laskin DM, editor. Oral and maxillofacial surgery. St Louis: Mosby; 1985. pp. 219–252.

3. Lewis MA. Why we must reduce dental prescription of antibiotics: European Union Antibiotic Awareness Day. Br Dent J. 2008;205(10):537–538.

4. Dy, ER. Inappropriate antibiotic use in Philippines. Phil J Microbiol Infect Dis 1997;26(2):77-87.

5. Kardas P, Devine S, Golem besky A, Roberts C. A systematic review and metaanalysis of misuse of antibiotic therapies in the community. Int J Antimicrob Agents 2005 Aug;26(2):106-113.

6. Anastasio GD, Little JM Jr, Robinson MD, Pettice YL, Leitch BB, Norton HJ. Impact of compliance and side effects on the clinical outcome of patients treated with oral erythromycin. Pharmacotherapy 1994 Mar-Apr;14(2):229-234.

7. Bitarães EL, Oliveira BM, Viana MB. Compliance with antibiotic prophylaxis in children with sickle cell anemia: a prospective study. J Pediatr (Rio J) 2008 Jul-Aug;84(4):316-322.

8. Karda's P. Patient compliance with antibiotic treatment for respiratory tract infections. J Antimicrob Che mother 2002 Jun;49(6):897-903.

9. Kandakai TL, Price JH, Tell Johann SK, Holiday-Goodman M. Knowledge, beliefs, and use of prescribed antibiotic medications among low-socioeconomic African Americans. J Natl Med Assoc 1996 May;88(5):289-294.

10. Shehadeh M, Suaifan G, Darwish RM, Wazaify M, Zaru L, Alja'fari S. Knowledge, attitudes and behavior regarding antibiotics use and misuse among adults in the community of Jordan. A pilot studies. Saudi Pharm. J 2012;20(2):125-133.

11. Pechère JC, Hughes D, Karda's P, Corn glia G. Non-compliance with antibiotic therapy for acute community infections: a global survey. Int J Antimicrob Agents 2007 Mar;29 (3): 245-253.

12. Tagoe DNA, Attah CO. A Study of Antibiotic Use and Abuse in Ghana: a case study of the Cape Coast Metropolis. The Internet J of health. 2010;11(2). DOI: 10.5580/Bec

13. Mohana M. Self-medication with antibiotic in children in Sana'a city, Yemen. Oman Med J 2010 Jan;25(1):41-43.

14. Prakasam KC, Kumar N, Ramesh J. Student's knowledge of antibiotics: A cross sectional study of students in Tamil Nadu. International Journal of Pharmacy and Pharmaceutical Science 01/ 2011;3 (1): 232-233.

15. Curry M, Sung L, Arroll B, Goodyear-Smith F, Kerse N, Norris P. Public views and use of antibiotics for the common cold before and after an education campaign in New Zealand. N Z Med J 2006;119(1233): U1957.

16. Jose J, Jimmy B, Al Gahliya Mohammed Saif AL Sabahi G, Al Sabai A. A study assessing public knowledge, belief and behavior of antibiotic use in an Omani population. Oman medical journal. 2013 Sep;28(5):324.

17. McNulty CA, Boyle P, Nichols T, Clappison P, Davey P. The public's attitudes to and compliance with antibiotics. J Antimicrob Che mother 2007 Aug;60 (Suppl 1): i63-i68.

18. Manmohan T, Sreenivas G, Sastry VV, Rani ES, Indira K, Ushasree T. Drug compliance and adherence to treatment. J Med Dent Sci. 2012; 1:142-59.

19. Cope AL, Wood F, Francis NA, Chestnut IG. General dental practitioners' perceptions of antimicrobial use and resistance: a qualitative interview study. British dental journal. 2014 Sep;217(5): E9-.

20. Farooqui HH, Selvaraj S, Mehta A, Heyman DL. Community level antibiotic utilization in India and its comparison vis-à-vis European countries: evidence from pharmaceutical sales data. PLoS one. 2018 Oct 17;13(10): e0204805.