INTERNATIONAL JOURNAL OF PHARMACOLOGY AND THERAPEUTICS
ISSN 2249 – 6467

RESEARCH ARTICLE

EVALUATING KNOWLEDGE, ATTITUDE AMONG THE INTERNS FROM TWO INSTITUTION IN BELGAUM DISTRICT TOWARDS ANTIBIOTICS

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ABSTRACT

To assess the knowledge & attitude of the interns of two different institutions in Belgaum district about the use of antibiotics in dentistry and comparison of knowledge and attitude among two groups. 120 students participated in the study with 60 interns from each institution. A questioner was developed which included 13 of knowledge and 7 questions to assess attitude of students on antibiotics. The comparison of response of students between two institutions is obtained by chi square test.The results obtained were analyzed by chi square test where most of the results were non significant when compared and only 2% had significant difference in response by students of both institution. It was observed that on inter group comparison between students of two colleges not much significant difference was seen in the knowledge and attitude related to antibiotics. However in both groups of students, it was noted that majority were not aware about difference in prescription for bacterial and viral infections in relation to dosage and duration of therapy

Keywords: antibiotics, dentistry, comparison, Belgaum District

INTRODUCTION

Antibiotics are prescribed by dentists for treatment as well as prevention of infection. Indications for the use of systemic antibiotics in dentistry are limited, since most dental and periodontal diseases are best managed by operative intervention and oral hygiene measures. However, the literature provides evidence of inadequate prescribing practices by dentists, due to a number of factors ranging from inadequate knowledge to social factors.[1]. Antibiotics along with analgesics are the most common drugs used in dentistry; their judicious use can shorten the course of infection and minimize associated risks such as the spread of infection to adjacent anatomical spaces or systemic involvement. There is a widespread concern about the exaggerated use of antibiotics in dental practice and the emergence of resistant bacterial strains .In recent years, dentists have reported a shift from narrow spectrum to broad-spectrum antibiotic prescriptions due to increasing antibiotic resistance .There are evidences which suggest that antibiotic prescriptions by dental practitioners for therapeutic purpose differ significantly and prophylactic antibiotics are prescribed inappropriately, both for surgical procedures and for patients at risk from endocarditic .[2,3,4,5,6,7,8]

ISSN 2249 – 6467

.Dental practitioners regularly prescribe antibiotics for therapeutic or prophylactic purposes to manage oral and dental infections. However, inappropriate prescribing and excessive use of antibiotics have been identified as major factors in the emergence of antibiotic resistance, which is an ongoing challenge ever since the discovery of antimicrobial agents There are other issues too, such as possible adverse events and additional costs of prescribing. Consequently, surveillance of antimicrobial resistance, monitoring of antibiotic usage and attempts to improve prescribing attitudes have become crucial .[9]

Didactic lectures on antibiotics for undergraduate have been conducted, but no clinical relevance on real cases ,virtual cases is not thought about antibiotics. Hence the study is so conducted to evaluate the knowledge and attitude of the interns about antibiotic. Hence, the study is designed to assess knowledge among interns about antibiotics while prescribing antibiotics to a patient to look out for the positive attitude. Hence, this study would create awareness among the interns about the importance and efficiency of each and every antibiotic and the correct use of the antibiotic in right conditions keeping in mind about all the adverse effects, indications, contraindications for each one of them and also keeping in mind about the guidelines of antibiotic policy before prescribing.

AIM: To assess the knowledge & attitude of the interns of two different institutions in Belgaum district about the use of antibiotics in dentistry**.**

OBJECTIVES:

1) To assess the knowledge of the interns about antibiotics
2) To assess the attitude of the interns about antibiotics
3) Comparing the knowledge of the interns of the (A) Institute of Dental sciences with the interns of the (B) Institute of dental science, Belgaum city.
4) Comparing the attitude of the interns of the A Institute Of Dental sciences with the interns of the B Institute of dental science, Belgaum city.

MATERIALS AND METHOD

In the present *study, 120 interns participated in the study, 60 interns from each Institutes. The ethical committee clearance was obtained. Questionnaire were randomly distributed among the interns of the both the colleges in Belgaum city with no time limit to fill the form after obtaining consent form of willingness to participate in this study. The identity of the interns participating in the study and any information obtained kept back confidential. The answers were collected and data obtained transferred to XCELL Sheet and analyzed using software version of 17* .Descriptive analysis will be done for data obtained. Chi square test will be applied for both group *analyzed.* Comparison of knowledge and attitude between students of the two colleges will be done.

The study tool: A structured questionnaire was developed by reviewing relevant literature and questionnaires used previously in similar studies (Buke et al., 2005; Chen et al., 2005; You et al., 2008; McNulty et al., 2007a; McNulty et al., 2007).The questionnaire is given in[Annexure 2.]

Out of 20 questioners 13 questions were on knowledge of students about antibiotics and 7 questions were on attitude**.** **[10.11,12]**

METHOD OF COLLECTION OF DATA:

Selection criteria:

Inclusion criteria: 60 interns from Institute A and 60 interns from Institute B of dental sciences were included in the study.

Exclusion criteria: 1. Interns who are not willing to participate in the study .

RESULTS AND OBSERVATION: [ANNEXURE 1]

The study was conducted among 60 interns of (A Institution) and 60 interns of (B Institution) of Dental Sciences. The questionnaire was distributed randomly and the results were obtained. The result obtained from the item no 1 during your BDS course, the result obtained were from A institution 96.7% of students attended discussion and lecture and from B institute 95% of students attended as shown in .There was no statistical significant difference was found by the students of two institution when compared. The p value was p=1.The result obtained from the item 2 are from A Institution 3.33% of students read satoskar, 86.66% read Thripaty, 10% read lipicort and no students read Godman and gill man when compared with students from B Institution the result obtained were 80% of students read Thripaty,16.66% read Lippincort and in both group 3.33% read Thripaty and no students referred Godman and gill man.as shown in .There was no statistical significant difference found in reply by the students of both institutions.p value was 0.560.

The result obtained from the item 3 , is response from A institution was around 33.33 % answered yes and 66.67% answered and B Institution students replied yes was 46.66% and 53.3% answered as NO as shown in Table no 3 . There was no statistical significant difference was found by the students. The p value =.136.The result obtained from item 4 A Institution is 10% of students prescribed ciprofloxacin,3.33% amoxicillin,86.66% acyclovir, and the result obtained from B Institution13.33 % cipro,3.33% amoxicillin,83.33%acyclovir.In both group students don't prescribe erythromycin. There was no statistical significant difference found in reply between two institute students. **p value= .850.**The result obtained from the item 5 are response from students of A Institution was 61.7% prescribed antibiotics,28.33% combination ,10% macrolides and the result obtained from response of B Institution was 43.3% antibiotics,33.33% combination,23.33% macrolides and none prescribed all the drugs. There was no statistical significant difference. The p value is .005.The result obtained from the item 6 is about 1.6% said antibiotics is prescribed on the basis of blood test,5% by signs and symptom,3.33% physical examination, 25% culture ,65% by all methods ,result obtained from B Institution was 3.33% blood test ,5% signs and symptoms,,1.66% physical examination,26.66% culture,63.33% all methods. There was no statistical significant difference found between students of two Institution. p=..950.The result obtained from 7thitem that from A Institution 11.66% prescribed amoxcyillin,5% erythromycin,6.66% clindamycin,73.3% metronidozole,3.33% cotrimozole. The result obtained from B Institution was 33.33% amoxycillin,6.66% erythromycin,6.66% clindamycin,50% metronidazole,3.33% cotrimozole. There was no statistical significant difference was found by the students of both institution with p value .p=.060.

The result obtained from item 8 is from A institution students responded 61.7% to Acyclovir 200mg 5 times daily for 10 days orally, 28.33% to Cyclovir 5/mg/day 3 times a day for 10 days intravenously.6% to Cyclovir 15/mg/day 3 times a day for 7 days intravenously. , .The response from students of B institution was 43.3% to Cyclovir 200mg 5 times daily for 10 days orally, 33..33% to Cyclovir 5/mg/day 3 times a day for 10 days intravenously,23.33% Cyclovir 15/mg/day 3 times a day for 7 days intravenously., no students answered for use of Idoxurdine 200 mg for 4 times daily for 7 days.. P=.005. The result obtained from the item 9th. Students from A Institution responded for a) Ampicillin 2mg IM or IV

28.33% b) Cefazoline 2mg IM or IV 11.6% c) Clindamycin 500 mg IV55% d) Azithromycin 500mg PO 1.66%.The result obtained from B institution was 63.33% opted (A), 13.3% B, 15% C, 5% D. A significant difference was seen when compared both group by ≤ 0.01.

The item no 10 th Students from A Institution replied a) Gram positive bacteria 25% b) Gram negative bacteria 20 %c) Anaerobes 51.66% d) 3.33%All. With B institution when compared students replied Gram positive bacteria 30%, b) Gram negative bacteria 26.66%, c) Anaerobes16.6%, d) 3.33%.A significant difference was found with p value ≤ .001.

The results from item no 11 question is students responded as .Ciprofloxacin 25% b) Amoxicillin 55% c) Erythromycin 11.66% d) Gentamycin8.33%.for causing drug allergy. The result obtained from B institution a) Ciprofloxacin 26.66%, b) Amoxicillin 36.7% c) Erythromycin16.67%, d) Gentamycin 20%.There was no significant diferrence.p=.134.The results of item 12 is that response of students from A institution for advising mouth wash in denture stomatitis was around Nystatin Mouth Wash 80% b) Chlorhexidine Mouth Wash 18.33% c) Betadine oral gargle1.66%.The students from B institution advised Nystatin Mouth Wash 76.7%, b) Chlorhexidine Mouth Wash 20%, c) Betadine oral gargle 3.33%,no group students advised d) Cotrimazole lozenges.(table 12)/ .There was no significant deference found in responses of both institution when compared. P=.811.

The item 13 results for antibiotic most commonly used in periodontal disease is from A institution students reply was for a) Penicillin 20% b) Erythromycin 6.66% c) Acyclovir 8.33% d) Doxycycline 65% and when compared with B institution it was found a) Penicillin 26.66%, b) Erythromycin 10%, c) Acyclovir 16.66% d) Doxycycline 46%.There was no significant difference.(Table 13). The item no 1.1 in attitude section resulted 86.7% of students from A institution prescribe prophylactic dose of antibiotics and 13.33% don't advise prophylactic dosage, similarly 78.7% of students of B institution advise prophylactic dosage and about 21.66% don't advise. There was no statistical difference of opinion among two groups. (.table1.1) p=.554

The result obtained from item (1.2).Do you discontinue antibiotics soon after when patient feel better? Where 70% of A Institution students replied YES and 30% replied NO. The students from B institution replied YES 56.66% and 41% No (table 1.2) no statistical difference found.p=.225

The result obtained from 1.3. For how many days do you prescribe an antibiotic for?. The students of A institution replied a) 3 days 8.33% b) 5 days 91.7% c) 10 days nil d) 15 days nil and B institute students a)3 days 23.33% b) 5 days 26.1% c) 5 days nil d) 15 days nil. A significant difference was found when compared with p value of 0.24. (Table 1.3)

The results of item no 1.4 Are you aware of the brand names/length of courses/alternatives of different antibiotics? About 71.7% students of A Institution answered yes and 28.3% didn't know. The 56.7% students of B institution answered yes and 43.33% answered no. There was no significant difference among two groups (.table 1.4).p=.087.

The result from item no 1.5 for considering rules during prescribing antibiotics was A institution students marked for a) Age 8.33% b) Allergic drug reaction 6.66% c) compliance 0 d) pregnancy risk 0 e) All 85%. The result obtained by B institute was a) Age 8.33%.b) Allergic drug reaction 26.66%, c) compliance 0 d) pregnancy risk 0) 65%. A significant difference was found in the answers given by two groups with p

value of 0.12. (table 1.5). The results from item no 1.6 question . The students from A institution marked for a) Tablet 8.33% b) capsules 11.66% c) syrup76.7% d) suspension 3%. The answer of B institution was a) Tablet 13.33%, b) capsules 20%,c) syrup 63.3% d) suspension 3%.There was no significant difference.(table 1.6). p=.428.

The results from question 1.7 is students response from A institution 71,7% answered yes and 28.33% answered no. The students from B institution answered yes of 56.7% and no for 43.33%.There was no significant difference value of p=.120.(table 1.7).

Discussion:

. The duration of B.D.S course is of 4 year and followed by1 year rotatary internship. The pharmacology subject is taught in the 2nd year of curriculum in B.D.S students according to the apex body of regulatory board and Dental Council of India. They study various drugs ie analgesics, antibiotics, etc. Among them the knowledge on antibiotics is crucial. In both institutions summative assessment is carried at the end of 2 nd year by written and practical exam. The retention of knowledge on pharmacology is important factor as they have to take the knowledge from 2nd year to day's time practice. There is breach in 2 year from 2nd year and internship, so retention of knowledge on antibiotics is essential In both institutions the students gain knowledge on antibiotics by didactic lectures and discussion. In both institution there is difference in faculty teaching and the materials Hence this study was carried out to evaluate the knowledge and attitude on antibiotics among interns of two different institution The present study was conducted among 60 interns of A Institution and 60 interns of B Institution after obtaining ethical committee clearance and informed consent from students of both institution. A pre valid questioner of 20 were prepared in which 13 questions were on to assess the knowledge and 7 questions were on attitude of students on antibiotics .The questionnaire was distributed and responded questioner by students were collected back and data was analyzed by using SPSS soft ware version 16.0. The results were compared among two groups by applying Chi Square test.

The 1 st question was about attending lectures and discussion of students during their 2 ndyr in B.D.S course which showed around on average 97% of students from both institution attended theory lectures . There was no significant difference between two groups when compared. The 2 nd question was about study materials used by students to gain knowledge on antibiotics where most of the students referred text book authored by Thripaty followed by Lipicort and few students referred Godman and Gillman. This clearly justifies that students prefer Indian author than other. When compared there was no statistical significant difference found between both institution . No relevant evidence was found in literature.In present study the results from 3 rd question was no statistical significant, difference was found between the students of both group, where both institute students didn't agree of use of antibiotics in viral condition.This clearly indicates that students of both institution have adequate knowledge on indication of antibiotics. According to study carried by Ali oh et al 2011 where he did cross sectional study on public knowledge and attitude on usage of antibiotics in Penang Malaysia where 13,7% of public responded to incorrect answer[13]. Another study done by Gadheer reported that students reponded 79.8% of students reponded to the useof antibiotics in bacterial infection and 21.2% responded that antibiotics can be used in viral infection bacterial infection (76.7%). [14]The response of participants to the 4 th question was not significant as most of the students were

ISSN 2249 – 6467

aware of using acyclovir (84 %) medicine during viral disease. There was no statistical significant difference found when compared between two groups which reveals that students are aware of difference between bacterial and viral infections.. This study was disimilar to study done by Mickee et al (1999) and Ghadeer et al 2012 where practioneres about 28.7 % priscribe antibiotics during cold and cough. [14,15,16].The fift h question on preference of antibiotics in cellulits and space infection where in both group students responded to use only antibiotics about 55% and 32% of students advised combination of drugs,and 20 % priscribed only macrolides.There was no statistical significant diference found when results were compared between two groups.This findings were similar to the study done by Palmer et al in 2000where 77% of general practioner priscribed antibiotics , 22% combination of drugs and 2% only macrolides . As cellulits and space infection is of complex mixtures of facultative and anaerobic bacteria, some of which are penicillin resistant. The main choices of antibiotics by the practitioners in the survey for dental abscesses were amoxicillin and metronidazole. The use of amoxicillin and metronidazole is supported by some microbiological and clinical findings.[5] The three most used antibiotics are amoxicillin, metronidazole and a combination of the two antibiotics. For cellulitis in particular, the results showed that there a wide variation of antibiotic prescriptions for this condition. [16]

The result obtained from the sixth question which was about how they differentiate between bacterial and viral infections, from table 6 , respondents of A Institution was about 1.6% said by blood test,5% by signs and symptom,3.33% physical examination, 25% culture ,65% by all methods result obtained from B Institution was 3.33% blood test ,5% signs and symptoms,,1.66% physical examination,26.66% culture,63.33% all methods. When compared there was no statistical significant difference found between students response of two Institution and most of the students differentiated bacterial and viral infection by all methods ie blood ,signs and symtoms, physical examination and culture (63.33%) by all the methods of investigation .Knowledge on indications for culture and sensitivity testing was correctly replied by 60% of the respondents while 25.7% did not have any idea. Only 1.4% of the respondents reported the right guidelines in deciding which effective antibiotics to prescribe.[,20]The item no 7 results where A Institution was 11.66% prescribed amoxcyillin,5% erythromycin,6.66% clindamycin,73.3% metronidozole,3.33% cotrimozole. and from B Institution was 33.33% amoxycillin,6.66% erythromycin,6.66% clindamycin,50% metronidazole,3.33% cotrimozole. There was no statistical significant difference was found by the students of both institution (.table 7). Similar study done by Palmer et al where the results were contrary to the present study Table 2 shows the antibiotics prescribed for adults with an acute dentoalveolar infection, the frequencies, dosages and length of the course. Amoxicillin was the principal antibiotic prescribed with 70.5% choosing this antibiotic as their first choice., . Penicillin V was the next most popular first choice of antibiotic with 20.5% using it; Metronidazole was used by 7% of the respondents . Both ampicillin and cephalexin were prescribed by only 0.5% of respondents. The main choice of therapeutic antibiotic for patients allergic to penicillin was either erythromycin 46.7%, or metronidazole 48%: the other choices were tetracycline (0.9 %) or cephalosporin[.5]The 8th question which was about the drug they prescribe for Herpetic Gingivostomatitis.

The response from students of A institution was ,61.7% of students answered for Acyclovir 200mg 5 times daily for 10 days orally, 28.33% to Cyclovir 5/mg/day 3 times a day for 10 days intravenously.6% to Cyclovir 15/mg/day 3 times a day for 7 days intravenously. ,.The reponse from students from B institution was 43.3% of students answered Cyclovir 200mg 5 times daily for 10 days orally, 33..33% Cyclovir 5/mg/day 3 times a day for 10 days intravenously,23.33% Cyclovir 15/mg/day 3 times a day for 7 days intravenously., Students from both group didn't responded for use of iodoxouridine. There was no staistical significant difference found by respondents of both group when compared. Approximately 62% of Students in both group answered correct.[18,20]

The result obtained from the item no 9 th'The response of students from A Institution was 28.33% of students priscribed Ampicillin 2mg IM or IV,11.6% to Cefazoline 2mg IM or IV , 55% to Clindamycin 500 mg IV, 1.66% for Azithromycin 500mg .The result obtained from B institution was 63.33% opted ampicillin,11.3% cefazoline 2mg, clindamycin to 15% and,5% for azithromycin. The indications for antibiotic prophylaxis in dentistry are not etched in stone due to frequent updates and changes in guidelines ,In the present study, 44.4% of the respondents gave wrong indications for prophylactic use of antibiotics. The study done by found that 66. 4% of dental practitioners follow the AHA guidelines (2008) in their prophylaxis prescription for patients not allergic to penicillin who were at risk of I.E. For patients allergic to penicillin, a majority of dentists surveyed follow AHA guidelines, On the other hand, there were 3% of surveyed dentists who used amoxicillin for patients allergic to penicillin, and this is contraindicated because of anaphylaxis and hypersensitivity reactions. A statistical significant difference was seen when responses were compared between both group by ≤ 0.01. Most of the students from A institution answered correct. This shows that students from B institution lacked knowledge about prophylactic dosage in Infective endocarditis.[5,16,19]

In the present study the response to 10 th question was from A institution students answered correct about 51.66% whereas students of B institution answered incorrect about 16.66%. A significant difference was found between two groups when compared. This clearly indicates that students from A institution had adequate knowledge on microorganism in abscess and B Institute students lack knowledge on microorganisms. More recent studies have shown that main isolates from dental abscesses are complex mixtures of facultative anaerobic bacteria. [9] .

The present study result on 11 th question showed that maximum students from A and B institution answered correctly as amoxicillin causes maximum allergy about 54% followed by ciprofloxicilin 24%,erythromycin 12% and gentamycin 11%. This suggests that students of both institution had adequate knowledge on drug allergies. There was no significant difference found when results were compared between two groups. Several literature reported that amoxicillin causes more drug allergy than other drugs.[4,5,19.]

The students from both institution were aware of prescribing nystatin mouth wash in denture stomatitis with 80% answering correctly. This indicates that maximum students had adequate knowledge on drugs usage in fungal infection. Ataei *et al.* compared the effect of imported nystatin and chlorhexidine rinses with domestic ones and concluded that the imported nystatin was more effective than the local one and also with considerably different effect on

standard strain of *Candida albicans* compared with the locally isolated clinical strains.[21]

The response of students from both instituion for the 13 th question that which antibiotic is commonly used in periodontal disease was 60% of students replied correctly as doxcycycline. There was no significant difference found in the response of students between two groups when compared In a study, over 40% of the respondents routinely or frequently prescribed systemic antibiotics in periodontal therapy. However, 55.7% of the respondents to use of Amoxicillin in combination with metronidazole. Although systemic antibiotic therapy can provide great benefit to periodontal patients who do not respond to mechanical periodontal therapy and those with acute periodontal infections associated with systemic medical conditions, its routine use is not recommended. Amoxicillin in combination with metronidazole was the overwhelming choice of antibiotic by most respondents.[16,19]

The 1 st question of attitude 1.1 around 85 % of students of A and B institution prescribed prophylactic dose of antibiotics and 15% don't advise prophylactic dosage,. There was no statistical difference of opinion among two groups. This study is in accordance to the study done by where, 44.4% of the respondents gave wrong indications for prophylactic use of antibiotics. . This suggests that there is need to instruct oral health care providers in specific prevailing conditions that warrant prophylactic antibiotic use.[16] In contrary to present study another study done by showed that only 20% of practitioner prescribed prophylactic antibiotic to healthy individuals.[7]

The result obtained from question1.2 stated. Do you discontinue antibiotics soon after when patient feel better ? Where 65% of students of both institutions replied NO and 35% replied YES. This shows that students have positive attitude on maintaining dosage of antibiotics. statistical diference found stated.This was in accordance with study done by Most of the respondents (71.1%) had correct knowledge of the need to complete the full course of antibiotics when symptoms of infection are improving. A higher proportion of respondents with correct knowledge was noted in the current study when compared with other studies done in Hong Kong (58%) and Taiwan (50.1%) . In contrast, only 59.8% agreed that they would continue with antibiotic treatment when they start feeling better. A weak positive correlation between knowledge and attitudes was noted pertaining to these statements ($r = 0.276$, $n = 408$, $p < 0.001$); that is, those who knew the need for completing the full course did not necessarily practice it. Therefore, our results suggest that better knowledge does not necessary imply appropriate attitude in relation to antibiotics use. Besides, 62% had correctly agreed that the effectiveness of treatment would reduce without completion of the full course of antibiotics, which is 9% less as compared to 71.1% knew that they should complete treatment course. In our study, 77% of respondents reported that they would stop taking a course of antibiotics when they felt better, compared to 58% (You et al., 2008) and 13% (McNulty et al., 2007b) in other surveys. Similarly, 48% of respondents believed that taking antibiotics would lead to a quicker recovery.[.12,13,16]

The result obtained from question 1.3. For how many days do you prescribe an antibiotic for?. 92% of students of A institution B institute answered correct as antibiotics dosage is 5 days.. A significant difference was found when compared with p value of 0.24. Frequency of prescribing is usually mentioned in the known resources for antibiotic prescribing, whereas duration of treatment recommended in therapeutic

guidelines is most commonly based on expert opinion A survey in Canada found that the average duration of antibiotic use prescribed by dentists is 6.92 days. Another survey in the USA found that endodontists prescribe antibiotic use for an average of 7.58 days. Recent studies on the attitudes of dentists in the Eastern Mediterranean region showed that dentists preferred to prescribe a lower dosage of an antibiotic over a longer period.[22,23,24,25,26]

Acute orofacial infections have a rapid onset and relatively short duration of 2 to 7 days, particularly if the offending cause is treated and/or eliminated . If clinical experience and the nature of the infection demonstrate that its predicted course may be 3 days, then 3 days of antibiotic therapy is enough. When clinical evidence indicates that the infection is expected to resolve or is resolved, the antibiotic therapy should be terminated. [.9]

The results of question no 1.4 Are you aware of the brand names/length of courses/alternatives of different antibiotics?. About 71.7% students of A Institution B institution answered yes and 39% answered no. There was no significant difference among two groups. This shows students are well oriented with brand names and dosage frequency of antibiotics. This also indicates that students are trained well during their course. antibiotics should be prescribed at the correct frequency, dose, and duration so that the minimal inhibitory concentration is exceeded, and so that side effects and the selection of resistant bacteria are prevented. Prolonged courses of antibiotics destroy the commensal flora. In addition, longer durations of up to 21 days may result in the selection of resistant strains and a reduction in the ability of the oral flora to resist the colonization by harmful micro-organisms that are not normal residents, leading to superimposed infections by multi-resistant bacteria and yeasts.[1,22,23,24,25,26]

The result from question no 1.5 What do you keep in mind while prescribing an antibiotic to a patient?. The result obtained was 85% of students of A institution answered correctly that they consider age, pregnancy, allergy during prescription of antibiotics where as on 65% of students response was correct and interesting finding was that students didn't consider pregnancy during prescription. This indicates that they are unaware of adverse effect of antibiotics during pregnancy. A significant difference was found in the answers given by two groups with p value of 0.12-. (table 1.5) The drug description for pregnant woman of 1 trimester. Almost one fifth students (21.6 percent) suggested antibiotic and analgesics. Medication of amoxicillin is in safe zone while metronidazole is contraindicated in 1 trimester .Almost 40 percent responses contained antibiotics for pregnant woman. In practice, doctors prefer to avoid prescribing antibiotics in 1 trimester of pregnancy.[26,27]

The results of 1.6 question (Which type of drug administration do you prefer in children below 10 years?) Most of the students preferred route of administration by syrup 72%,,12% tablet,10% capsules and 6% preferred suspension. There was no significant difference found between two groups in response. From guideline of pharmacology, a child of eight year old should be given medicine in syrup form . Syrup (liquid) form is easy to take as compared to tablet form. However, in clinical practice, patient (child)' consent is taken before prescribing any form of medicine. Due to absence of real child patient, students might not have taken this aspect. They concentrated on choice of drug rather than form of drug.[27]

The question 1.7(.Do you update yourself regularly about new drugs?). Maximum number of students 71,7% updated themselves regularly about new drugs. This indicates awareness among students to

ISSN 2249 – 6467

frequently update themselves for the benefit of of patient care.

Limitations of study: Our study was carried out to evaluate knowledge and attitude on antibiotics among interns of Belgaum district, and comparing the response of students between two institution. Most of the students responded well and no significant difference found though there is disparity in collage, different set up and resource person are also different. The validity and reliability of questioner was major drawback as there was no blue print available. The questioner was randomly distributed and no time limit was given to respond to questions is major disadvantage as there is inclination of students taking help out from seniors, colleagues and other sources of reading materials to answer .

ANNEXURE 1 Result table.

Q.3 Viral infections can be controlled with antibiotics	**A INSTITUTION**		
	a) Yes	**20**	**33.33**
	b) No	**40**	**66.77**
	B INSTITUTION		
	a) Yes	**28**	**46.66**
	b) No	**32**	**53.33**
			P=.136
Q.4 Drugs used in viral infections?	**A INSTITUTION**		
	a) Ciprofloxacin	**6**	**10**
	b) Amoxicillin	**2**	**3.33**
	c) Acyclovir	**52**	**86.66**
	d) Erythromycin	**0**	
	B	**8**	**13.33**

ISSN 2249 – 6467

	INSTITUTION **a) Ciprofloxacin** **b) Amoxicillin** **c) Acyclovir** **d) Erythromycin**	**2** **50** **0**	**3.33** **83.33** **P= .850**
Q.5 Which drug do you prefer in cellulitis and space infection?	**A INSTITUTION** **a)Antibiotic** **b) Combination** **c) Macrolides** **d) all** **B INSTITUTION** **a)Antibiotic** **b) Combination** **c) Macrolides** **d) all**	**6** **38** **4** **12** **10** **28** **4** **18**	**10** **63.33** **6.66** **20** **16.66** **46.7** **6.66** **30** **P=.294**

Q.6 How do you differentiate between bacterial and viral infections	**A INSTITUTION** **a) Blood tests** **b) Signs and symptoms** **c) Physical Examination** **d) Culture** **e)All** **B INSTITUTION** **a) Blood tests** **b) Signs and symptoms** **c) Physical Examination** **d) Culture** **e)All**	**1** **3** **2** **15** **39** **2** **3** **1** **16** **38**	**1.66** **5** **3.33** **25** **65** **3.33** **5** **1.66** **26.66** **63.33** **P=.950**
Q.7 Antibiotics preferred for dentoalveolar abscess/necrotic			

pulp /apical abscess	**A INSTITUTION** **a) Amoxicillin** **b) Erythromycin** **c) Clindamycin** **d) Metronidazole** **e) Cotrimazole** **B INSTITUTION** **a) Amoxicillin** **b) Erythromycin** **c) Clindamycin** **d) Metronidazole** **e) Cotrimazole**	**7** **3** **4** **44** **2** **20** **4** **4** **30** **2**	**11.66** **5** **6.66** **73.3** **3.33** **33.33** **6.66** **6.66** **50** **3.33** **P=.060**
Q 8 Which drug do you prescribe for Herpetic Gingivostomatitis	**A INSTITUTION** **a) Acyclovir 200mg 5 times daily for 10 days orally** **b) Acyclovir 15/mg/day 3 times a day for 10 days**	**37** **17**	**61.7** **28.33**

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	intravenously **c) Acyclovir 15/mg/day 3 times a day for 7 days intravenously** **d) Idoxurdine 200 mg for 4 times daily for 7 days orally** **B INSTITUTION** **a) Acyclovir 200mg 5 times daily for 10 days orally** **b) Acyclovir 15/mg/day 3 times a day for 10 days intravenously** **c) Acyclovir 15/mg/day 3 times a day for 7 days intravenously** **d) Idoxurdine 200 mg for 4 times daily for 7 days orally**	**6** **0** **26** **20** **14** **0**	**10** **0** **43.33** **33.33** **23.33** **P=.005**
Q.9 What are the prophylactic dose for Subacute Endocarditis	**A INSTITUTION**		

	a) Ampicillin 2mg IM or IV	**17**	**28.33**
	b) Cefazoline 2mg IM or IV	**7**	**11.66**
	c) Clindamycin 500 mg IV	**33**	**55**
	d) Azithromycin 500mg PO	**1**	**1.66**
	B INSTITUTION		
	a) Ampicillin 2mg IM or IV	**38**	**63.33**
	b) Cefazoline 2mg IM or IV	**8**	**13.33**
	c) Clindamycin 500 mg IV	**9**	**15**
	d) Azithromycin 500mg PO	**3**	**5**
			P<0.01
Q.10 Which type of microorganisms are present in periapical abscess?	**A INSTITUTION**		
	a) Gram positive bacteria	**15**	**25**
	b) Gram negative bacteria	**12**	**20**
	c) Anaerobes	**31**	**51.66**
	d) All	**2**	**3.33**

	B INSTITUTION		
	a) Gram positive bacteria	**18**	**30**
	b) Gram negative bacteria	**16**	**26.66**
	c) Anaerobes	**10**	**16.66**
	d) All	**14**	**23.33**
			P<.001
Q.11 Which drug commonly causes allergy drug reaction	**A INSTITUTION**		
	a) Ciprofloxacin	**15**	**25**
	b) Amoxicillin	**33**	**55**
	c) Erythromycin	**7**	**11.66**
	d) Gentamycin	**5**	**8.33**
	B INSTITUTION		
	a) Ciprofloxacin	**16**	**26.66**
	b) Amoxicillin	**22**	**36.7**
	c) Erythromycin	**10**	**16.66**
	d) Gentamycin	**12**	**20**
			p=.130

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Q.12 Which drug do you prefer in Denture Stomatitis	**A INSTITUTION**	**48**	**8**
	a) Nystatin Mouth Wash	**11**	**18.33**
	b) Chlorhexidine Mouth Wash	**1**	**1.66**
	c) Betadine oral gargle	**0**	
	d) Cotrimazole lozenges		
	B INSTITUTION		
	a) Nystatin Mouth Wash	**46**	**76.7**
	b) Chlorhexidine Mouth Wash	**12**	**20**
	c) Betadine oral gargle	**2**	**3.33**
	d) Cotrimazole lozenges	**0**	**0**
			P=.811
Q.13 Which drug is preferred during periodontal diseases	**A INSTITUTION**	**12**	**20**
	1) Penicillin	**4**	**6.66**
	2) Erythromycin	**5**	**8.33**

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	3) Acyclovir 4) Doxycycline B INSTITUTION 1) Penicillin 2) Erythromycin 3) Acyclovir 4) Doxycycline	39 16 6 10 28	65 26.66 10 16.66 46.
Q.1.1 Do you prescribe prophylactic dose of antibiotic for extraction in diabetic patients.?	A INSTITUTION a) Yes b) No B INSTITUTION a) Yes b) No	52 8 47 13	86.66 13.33 78.7 21.66 P=.554
Q.1.2 Do you discontinue antibiotics soon after when patient feel better	A INSTITUTION a) Yes b) No B INSTITUTION	42 18 34	70 30 56.66

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	a) Yes **b) No**	**26**	**41** **P=.225**
Q.1.3. . For how many days do you prescribe an antibiotic for	**A INSTITUTION** **a) 3** **b) 5** **c) 10** **d) 15** **B INSTITUTION** **a) 3** **b) 5** **c) 10**	**5** **55** **0** **0** **14** **46** **0** **d) 15**	**8.33** **91.7p=** **23.33** **26.1** **0** **0** **p=.024**
Q.1.4 Are you aware of the brand names/length of courses/alternatives of different antibiotics	**A INSTITUTION** **a) Yes** **b) No** **B INSTITUTION**	**43** **17** **34** **26**	**71.7** **28.33** **56.7**

	a) Yes b) No		43.33 P=.087
Q.1.5 What do you keep in mind while prescribing an antibiotic to a patient	A INSTITUTION a) Age b) Allergic drug reaction c) compliance d) pregnancy risk e) All B INSTITUTION a) Age b) Allergic drug reaction c) compliance d) pregnancy risk e) All	 5 4 0 0 51 5 16 0 0 39	 8.33 6.66 85 8.33 26.66 65 P=.012
Q.1.6 Which type of drug administration do you prefer in children below 10 years	A INSTITUTION	5	8.33

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	a) Tablet	7	11.66	
	b) capsules	46	76.7	
	c) syrup	2	3	
	d) suspension			
	B INSTITUTION	8	13.33	
	a) Tablet	12	20	
	b) capsules	38	63.33	
	c) syrup	2	3	
	d) suspension			P=.428
Q.1.7.Do you update yourself regularly about new drugs	A INSTITUTION			
	a) Yes	43	71.7	
	b) No	17	28.3	
	B INSTITUTION	34	56.7	
	a) Yes	26	43.33	p=.120
	b) No			

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ANNEXURE 1 QUESTIOONERIE

Evaluating knowledge, attitude among interns of Belgaum District towards antibiotics

Knowledge

1.Have you attended discussion/lectures about antibiotics during your BDS course?
a) Yes b) No

2. Which text books do you prefer for pharmacology?
a) Satoskar b) Tripathy c) Lipincort d) Goodman & Gillman

3. Viral infections can be controlled with antibiotics?
a) Yes b) No

4. Drugs used in viral infections?
a) Ciprofloxacin b) Amoxicillin c) Acyclovir d) Erythromycin

5)Which drug do you prefer in cellulitis and space infection?
a)Antibiotic b) Combination c) Macrolides d) all

6. How do you differentiate between bacterial and viral infections?
a) Blood tests b) Signs and symptoms c) Physical Examination d) Culture e) All

7. Antibiotics preferred for dent alveolar abscess/necrotic pulp /apical abscess?
a) Amoxicillin b) Erythromycin c) Clindamycin d) Metronidazole d) Cotrimazole

8. Which drug do you prescribe for Herpetic Gingivostomatitis?
a) Cyclovir 200mg 5 times daily for 10 days orally
b) Cyclovir 15/mg/day 3 times a day for 10 days intravenously
c) Cyclovir 15/mg/day 3 times a day for 7 days intravenously
d) Idoxurdine 200 mg for 4 times daily for 7 days orally

9) What is the prophylactic dose for Sub acute Endocarditic?
a) Ampicillin 2mg IM or IV b) Cefazoline 2mg IM or IV c) Clindamycin 500 mg IV d) Azithromycin 500mg PO.

10). Which type of microrganisms are present in periapical abscess?
a) Gram positive bacteria b) Gram negative bacteria c) Anaerobes d) All

11).Which drug commonly causes allergy drug reaction?
a) Ciprofloxacin b) Amoxicillin c) Erythromycin d) Gentamycin

12.Which drug do you prefer in Denture Stomatitis?
a) Nystatin Mouth Wash b) Chlorhexidine Mouth Wash c) Betadine oral gargle d) Cotrimazole lozenges.

13.Which drug is preferred during periodontal diseases?
a) Penicillin 2) Erythromycin 3) Acyclovir 4) Doxycycline

ATTITUDE

1.1 Do you prescribe prophylactic dose of antibiotic for extraction in diabetic patients.?
a) Yes b) No

1.2.Do you discontinue antibiotics soon after when patient feel beter?
a) Yes b) No

1.3.For how many days do you prescribe an antibiotic for?
a) 3 b) 5 c) 10 d) 15

14. Are you aware of the brand names/length of courses/alternatives of different antibiotics?
a) Yes b) No

1.5. What do you keep in mind while prescribing an antibiotic to a patient?
a) Age b) Allergic drug reaction c) compliance d) pregnancy risk e) All

1.6. Which type of drug administration do you prefer in children below 10 years?

a) Tablet b) capsules c) syrup d) suspension

1.7.Do you update yourself regularly about new drugs?

a) Yes b) No

CONCLUSION

It was observed that on inter group comparison between students of two colleges not much significant difference was seen in the knowledge and attitude related to antibiotics. However in both groups of students, it was noted that majority were not aware about difference in prescription for bacterial and viral infections in relation to dosage and duration of therapy. Many students were also lacking in knowledge about recent updates and advances in pharmacology. Therefore more emphasis should be laid on conducting seminars, continued dental education programs, presentations related to the above mentioned topic at undergraduate level.

Unfortunately the optimal duration of antibiotic therapy for many dental infections has never been defined by randomized controlled trials. Current guidelines are based on expert opinion, which is considered to be the lowest level of evidence. There is an urgent need for randomized controlled trials with the objective of providing a scientific basis for best practice recommendations. Until such data exist the antibiotics should be applied for a short duration. Students should be encouraged to participate in CPD program on antibiotics.

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