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ORIGINAL ARTICLE

Knowledge about Prescription of the Antibiotic for Endodontic's Treatment among Final Year Students

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ABSTRACT

Background: Since antibiotic's discovery, they have been widely utilized for treatment of the odontogenic infections. Writing a prescription is a vital determining factor of the good doctor/clinician. Drug Prescription is a dynamic and personalized clinical process, which is established as a result of necessities of the patient & acquaintance of practitioner & is also the component of curriculum of graduation.

Aim: To evaluate and assess knowledge about prescription of the antibiotic during the endodontics's treatment and the errors made by final year students at the dental hospital.

Setting: Multan Medical & Dental College Multan

Methodology: This survey-based research was led among 48 students of Multan Dental College Multan. A form was designed, regarding pattern of the antibiotic's prescription & conditions/situations for which the drugs were recommended by students of final year.

Results: The medication of choice was mostly Amoxicillin alone (75%) and Amoxicillin + clavulanic acid (55%). Most of antibiotic prescriptions were written for Perio-endo lesion (85%), acute apical abscess (80%). Chronic apical abscess with sinus tract (80%), Ch. apical abscess with periodontitis (65%), Patients with swelling & difficulty in swallowing (62%). In this study the greatest numbers of antibiotics prescribed were prophylactically for congenital cardiac sicknesses 69.7%, and uncontrolled diabetes mellitus 60%. Prosthetic joint in past 2 years 40% & Chemo/radio therapy 30%.

Conclusion: There is a dearth of knowledge as well as information concerning the suitable indication, kind, & dose of the antibiotics in practice of dentistry. The curriculum should propose great accent on prescription, and decent prescription practices should also be taught in clinical rotation's, using actual or imaginary cases.

Keywords: Antibiotics, Endodontics, Prescription writing, prophylaxis, Root canal treatment (RCT)

INTRODUCTION

Since antibiotic's discovery, they have been widely utilized for treatment of the odontogenic infections and their arrival led to a significant decline in occurrence of mortal infections and prefigured an innovative era in remedy of the infectious sicknesses[1]. Medicine therapy is recognized as vital tool that Healthcare givers utilize for influencing health of their patients. Drug Prescription is a dynamic and personalized clinical process[2], which is established as a result of necessities of the patient & acquaintance of practitioner[3]. Writing a prescription is well-thought-out as a vital determining factor of the good doctor/clinician & is also the component of curriculum of graduation[4]. It is similarly a requisite skill for the doctors of all the specialities[5].

Resistant of the various microbial genera/classes against approximately each recognized antibiotic agent has been noticed since previous couple of decades. Misuse & extra-use of antibiotics has also been thought-off as the core cause for occurrence of various multidrug-resistant strains[6, 7]. Risk to benefit proportion/ratio has to be constantly assessed before commending antibiotics. Appropriately some patients will gain advantage from the antibiotics specifically those given systemically. A constrained as well as conservative usage of the antibiotics is immensely proposed in practice of the endodontic, nevertheless undiscriminating usage (encompassing pulpitis- no infection cases) is contrasting to thorough health practice. This may produce a choosy pressure & resultant overgrowth of the intrinsically resilient microbes, prompting the patients to the super besides secondary infections & rendering medicines unsuccessful against possibly mortal contagious conditions[7,1].

Dental surgeons & healthcare workers prescribe many drugs for various circumstances. These medications should be recommended accordingly, otherwise these might cause harm to the patient. Adverse medicine actions are quantified to have been related with the mistake or inappropriate writing of prescription[11,12]. Nevertheless if these events are not lethal, but still could prove as a source of morbidity to any certain individual. In modern era, act of commending antibiotics has become progressively challenging owing to some reasons. Errors regarding Prescribing could usually be clustered into those of the prescription writing or decision-making. While latter may comprise of those errors, for instance over-prescribing, under- prescribing, irrational or unfitting prescribing whereas former stresses on those errors made throughout the writing of the prescription[13,14]. Poor prescribing by junior doctors as well as students has also been documented by various researchers, partly assigning it to the facts or information related errors[15, 16].

Objective of our exploration was to evaluate and assess knowledge about prescription of the antibiotic during the endodontics's treatment and the errors made by final year students at the dental hospital.

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METHODOLOGY

This survey-based research was led among 48 students of Multan Dental College Multan. After approval from IRB a form was designed, regarding pattern of the antibiotic's prescription & conditions/situations for which the drugs were recommended by students of final year. Through this questionnaire, knowledge of students relating to indications of the prescription of the various antibiotics for various clinical signs that possibly was related to infections of mouth was investigated. The notable clinical signs were malaise & fever, proof of systemic spread, diffused swelling, as well as trouble during swallowing. Partakers were also queried whether some clinical circumstances/states need antibiotics & their choice of treatment if any. Clinical conditions included were, chronic apical periodontitis, acute pulpitis, Perio-endo lesion, acute apical abscess, long-lasting swelling of apical region having sinus tract. Features prompting prescriptions of the antibiotics were also

investigated. Our questionnaire queried whether patient's expectation concerning prescribing an antibiotic, one extended sitting RCT, two sitting RCT's, and re-treatment possibly be the reason for prescribing antibiotics. Other component of this inquiry form assessed/appraised knowledge on medicinal circumstances/states & dental procedures which could need the prophylactic antibiotics. Oral procedures were post as well as pre-endodontic surgeries; all RCT's, the medicinal ailments incorporated were congenital heart diseases, HIV+, hepatitis B, uncontrolled diabetes, prolapse of mitral valve, and patients with or having prosthetic joint in last couple of years & those reporting a past history of tumor or radiotherapy. Collected data was charted and analyzed.

RESULTS

Males were 19 while females were 29 (Table 1). Medication of prime choice was generally Amoxicillin + clavulanic acid (55%) & Amoxicillin alone (75%) Graph 1. Most of antibiotic prescriptions were written for Perio-endo lesion (85%), Apical Abscess (acute) (80%) & patient with malaise & temperature (44%). Chronic abscess of apical region showing sinus tract (80%), Ch. abscess of apical region with inflammation of periodontium (65%), Patients having swelling & trouble in swallowing (62%) while 45% was stated throughout extensive RCT. Overall, 16% of contesters always wrote antibiotics afterwards root canal therapy. For the chronic periapical lesions & chronic periapical abscess including sinus tracts, 55% and 58%, respectively (Table 2).

Table 1: Gender distribution

Male	Female	Total
19(39.5%)	29(60.5%)	48

Graph 1: Percentage of the antibiotics that were prescribed by the respondents

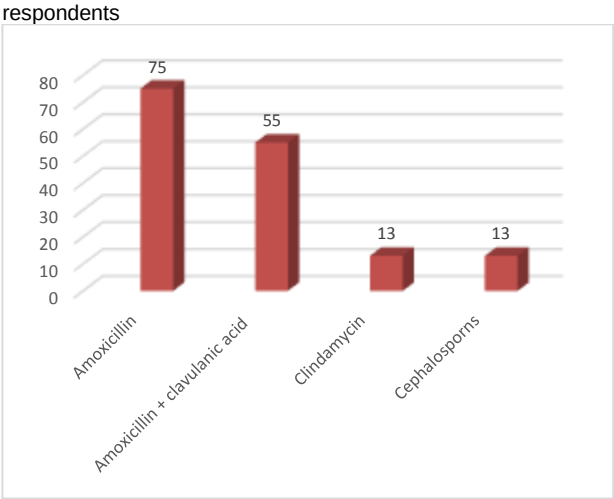
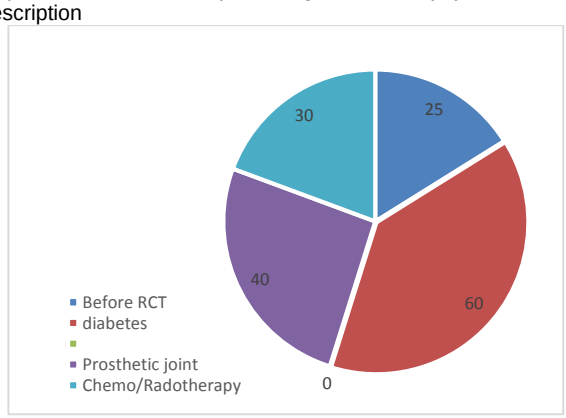


Table 2: Conditions with percentage of antibiotic prescription

Conditions	Prescribed antibiotics
Acute Apical abscess	80%
Perio-endo lesion	85%
Chronic apical abscess with sinus tract	80%
Ch. apical abscess with periodontitis	65
Patients with fever & malaise	44%
Patients with swelling	72%
Patients with swelling & difficulty in swallowing	62%
If patients insist	15%
In retreatment	20%
Post RCT	16%
During prolong root canal treatment	45%

In this current study the majority of those antibiotics given were prophylactically for congenital cardiac sicknesses 69.7%, and unrestrained diabetes mellitus 60%. Prosthetic joint in former 2 years 40% Chemo/radiotherapy 30% while 25% before the commencement of RCT (Graph 2).

Graph 2: Conditions with percentage of the Prophylactic antibiotic prescription



DISCUSSION

Mostly presenting dental complaints are mainly inflammatory issues which are linked with pain and this pain is either owing to chronic or acute infections of the pulp origin, which forces operative intrusion, instead of the antibiotics. Occasionally ailments relating to endodontic source may well be dealt without giving antibiotics[1]. In this research, the medicine of choice was Amoxicillin alone (75%) followed by Amoxicillin + clavulanic acid (55%) which is greater than other investigations where Amoxicillin was medicine of choice with 57.6% & 46.47[17,18]. In this current research Clindamycin was generally the latter choice. These outcomes are also in harmony with study of Fahad et al & Jain A et al where clindamycin was seldomly while amoxicillin was mostly prescribed[19,18].

In our investigation, antibiotic writing for apical abscess primarily acute (80%) which is in assessment with outcomes of M Reza & Fahad et al where 74% & 71% contestants exploit antibiotics for the abscess of the apical or dental origin[17,19]. This percentage is more than of another research where 62.6% contestants prescribed different antibiotics in various cases of the peri-apical abscess[20]. In our recent survey, 44% patients with fever & having malaise as well were prescribed different antibiotic which is not like that of another research where 57% individuals complaining fever were also given antibiotics[19]. According to Palmer et al, 12.5% of GDPs in U.K prescribed antibiotics for an acute pulpitis[21] whereas in another study this was (8.2%)[20]. Antibiotics could not be specified and not support vital pulpal cases and patients starved of signs of any local or systemic involvement/ infection[22] which is in disparity to our current study where various antibiotics were in use for pulpal situations by the most of contestants.

Proper treatment/management of pulpitis particularly irreversible is a debridement of the root canal's space. Root canal therapy (non-surgical) starved of antibiotic is usually acceptable to deal with long-lasting apical periodontitis, an acute or an irreversible pulpitis and draining sinus area. In these patients, pulpal circulation/flow generally compromised, & systemic antibiotic possibly will not reach the anticipated therapeutic concentrations inside the entire pulp[23]. Comprehensive non-surgical remedy for root channel could abolish the source of infection and might well be permitting the healing of the peri-radicular lesion generally. Nonetheless, Analgesics are specified for various peri-apical conditions as well as pain owing to inflammation of pulp[17].

Eighty percent of contributors of this current research quantified use of an antibiotics in the Ch. apical abscess having sinus tract which is more than double that of conveyed in one more study. 65% of contributors of our research quantified the usage of various antibiotics in Ch apical abscess having inflammation of periodontium as well, which is far larger than that informed by another researcher[24]. Outcomes of this investigation showed that 45% members give various antibiotics during the entire procedure of RCT, which is in accordance with results explained in another investigation where 35.2% contributors penned various antibiotics throughout the procedure of RCT[20]. Overall, 16% of the defendants constantly suggested various antibiotics after the completion of RCT. Our research showed that 65% subjects penned antibiotics for an apical abscess with inflammation of periodontium which is almost identical to outcome of other research where 58% subjects wrote various antibiotics as an adjunct[19].

Twenty five percent subjects of this investigation, advice medication before commencement of RCT which is more than two times that of another research which indicated 11.4%. In this current study, 30% respondents verified prescription of various antibiotics in those individuals with the history of Carcinoma & Radio/Chemotherapy. This figure is somewhat less than testified by Yousufi S (40.6%)[20]. Our outcomes showed that 69.7% contesters advice prophylactic antibiotics for hereditary cardiac sickness which is a somewhat superior than reported by other research where it was 60%[19]. 15% individuals said that they wrote antibiotics if patient insist them, this number is far smaller than reported by the Liaquat A et al (70%)[25].

Coverage with the Prophylactic antibiotics which are suggested solitary for high risk and vulnerable patients specially to infective endocarditis subsequently bacteremia. The practice of various prophylactic antibiotics for these individuals avoids blood-borne micro-organisms from housing on the shunts & prostheses or else from mounting within a miserable system. Patient who had prosthetic prolapses of mitral valve, uncontrolled diabetes as well as inherited ailments of heart (heart valve replacement and AV shunt) are on excessive risk for catching infections during various endodontic treatments, thus needing prophylactic antibiotics coverage[1]. Antibiotic prophylaxis earlier to commencement endodontic remedy is not quantified regularly for fit patients subsequently replacement of prosthetic joint, but antibiotic prophylaxis coverage would be well-planned during the preliminary three months after the operation of joint[26,27].

According to this present study, house officers use antibiotics indecorously which could lead to matters for instance resistant micro-organisms, drug-resistance and additional adverse effects. It gives the idea that knowledge regarding usage of an antibiotics is far-flung from ideal. This was seen in research of Wali A as well[28].

In this field of endodontics, routinely usage of various antibiotics either systemic/local, is still an arguable issue[29]. As per one more study, dental health providers must direct antibiotics as per already given guidelines, only in that case if therapies or management/treatments want it[30].

Abuse of antibiotic is a thought-full global issue/problem[31]. Rational prescribing created on comprehensive evidence-based facts is obligatory. Medical & dental healthcare workers/students must also be conscious of the diverse aspects of those drugs which they prescribed for effective treatment of sickness[32]. Evidence endorses that an antibiotic for target circumstances may also offer harm irrespective of its benefits[33]. Various antibiotics specifically broad spectrum are commonly used in field of the dentistry[34]. Many investigations regarding the antibiotic prescription in the field of the dentistry disclosed that over-prescribing is a universal occurrence[35]. In this field of endodontics, usage of antibiotics is perhaps increasing gradually[36].

The publication of commending protocols as well as guidelines could support to attain better results. Additionally, precise educational intercession may equally be effective. Usage of up to-date computers & clinical/scientific audit along with additional tools to rise knowledge related to antibiotic prescription and improve patient care ought to be considered constantly.

CONCLUSION

There is a dearth of knowledge as well as information concerning the suitable indication, kind, & dose of the antibiotics in practice of dentistry. Some participants needlessly gave the antibiotic. Efforts always ought to be done to advance the level of the entire education and further education associated initiatives on the skills of the antibiotic prescription. The curriculum as well as syllabus should propose great accent on prescribing, and decent prescription practices should also be taught in clinical rotation's, using actual or imaginary cases.

Conflict of interest: Nil

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