International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Knowledge, Attitude and Awareness about Medical Emergencies in Dental Office among Dentists in Chennai, Tamil Nadu- A Questionnaire Study.

Dr. J. Sreedevi [1], Dr. Priya Ramani [2], S. K. Shahil Rahman [3], Harsh Buch[3], Gowtham. R [3], Dr. P. S. Gayathri [4]

[1]Senior Lecturer, Department of Oral Medicine & Radiology, Thai Moogambigai Dental College and Hospital, Chennai, India.
[2]Head and Professor, Department of Oral Medicine & Radiology, Thai Moogambigai Dental College and Hospital, Chennai, India.
[3]Junior Resident, Department of Oral Medicine & Radiology, Thai Moogambigai Dental College and Hospital, Chennai, India.
[4]Reader, Department of Oral Medicine & Radiology, Thai Moogambigai Dental College and Hospital, Chennai, India.

ABSTRACT

Aim and objectives; To assess the knowledge, attitude and awareness about medical emergencies in dental office among dentists in Chennai.

Materials and methods; A cross-sectional questionnaire study was conducted among dentists of different years of experiences in practice in Chennai, Tamil Nādu. A questionnaire consisted of 20 questions regarding the knowledge, attitude and awareness towards Medical emergencies in dental office. The questionnaire was circulated among the dentists as Google forms through various social media modes and responses were noted and evaluated for statistical analysis by SPSS software version 24.0.

Results; of all the 100, (42%) were dentists with 1-5 years of experience followed by (29%) interns, 22% 5-10 of experience and (7%) experience of more than 10 years. About (51%) of the dentists were aware of the correct procedure of basic life support.

Conclusion; The current study implies that knowledge and awareness regarding medical emergencies in dental practice is quite insufficient has to be reinforced throughout the dentists so that it helps in better diagnosis and prompt action.

KEYWORDS: Medical emergencies, dentists, knowledge, awareness, dental practice.

INTRODUCTION

Medical emergencies can occur in the dental practice[1]. Dentists must be prepared to manage medical emergencies which may arise in practice[2]. The management of medical emergencies is widely considered a requisite skill for all dentists. Timely intervention of an emergency can significantly alter the outcome for a patient's morbidity and possible mortality[1]. Medical emergencies that have occurred in dental practices include vasovagal syncope, angina, hypoglycaemia, epileptic seizures, choking, asthma, anaphylaxis and cardiac arrest. It is estimated that, on average, dentist will experience a medical emergency at least once every two years[2]. Vasovagal syncope is the most common emergency encountered. Risk management can play an important part in reducing the risk of medical emergencies in the practice. It is therefore recommended that all clinics facilities have a process for medical risk assessment of their patients. It has been suggested that the presence of an updated medical history may help to minimise the risk of a medical emergency occurring. Medical emergencies were most likely to occur during and after local anaesthesia, primarily during tooth extraction and endodontics. The extent of treatment by the dentist requires preparation, prevention and then management, as necessary. Prevention is accomplished by conducting a thorough medical history with appropriate alterations to dental treatment as required. The most important aspect of nearly all medical emergencies in the dental office is to prevent, or correct, insufficient oxygenation of the brain and heart[5]. Therefore, the management of all medical emergencies should include ensuring that oxygenated blood is being delivered to these critical organs. This is consistent with basic cardiopulmonary resuscitation, with which the dentist must be competent. This provides the skills to manage most medical emergencies, which begin with the assessment, and if necessary, the treatment of airway, breathing and circulation (the ABCs of CPR).

Usually, only after these ABCs are addressed should the dentist consider the use of emergency drugs[3]. The aim of this survey is to assess the knowledge, attitude and awareness about medical emergencies in dental office among dentists in Chennai.

MATERIALS AND METHODS:

The questionnaire survey was conducted among 100 dentists [Interns, experienced dentists categorized into 3 groups; 1-5 years, 5-10 years and >10 years] of experience in Chennai. Permission to conduct the study was obtained from concerned authorities of the institute. The survey was conducted by generating online Google forms and circulated through various social media platforms. The questionnaire[table1] comprised of 20 questions pertaining to knowledge, practice [7 questions], and awareness [13 questions] on medical emergencies in dental practice. After agreeing to an informed consent form, the questionnaire was circulated, each participant was given a brief explanation on objectives behind this study before responding to the questionnaire, and information confidentiality was assured. Statistical analysis was performed using SPSS software version 24.0, to know the validity

of the questions. Chi-square test was used to compare results between groups. Any question with p value<0.05 was considered to be statistically significant.

RESULTS

100 dentists participated in the survey, out of which 29% were interns, 42% with 1-5 years of experience ,22% with 5-10 years of experience and the remaining 7% experienced with more than 10 years of experience [chart:1]. Only 29% of the participants were aware of the correct position in the dental chair to manage syncope. 52% of them were aware of the definite treatment of seizure as diazepam.62% were aware that bronchodilators must be given in case an acute asthmatic attack Application of gelatin sponge., Application of oxidized regenerated cellulose. Application of topical thrombin. Application of collagen. methods that are used to control post extraction bleeding, 24% picked all of these as methods to control post extraction methods. 60% were aware that beta blockers as first line drug for management for a patient suffering from angina pectoris in dental chair.56% were sure that, in dental practice, most common overdosage is caused by local anesthesia.38% were aware that anti-convulsant were drug of choice in case of local anesthesia overdosage. 56% were aware that anti-histamines were drug of choice in case of latex allergy.42% knew that IgE immunoglobulin that gets suspended in response to allergic response. 51% were aware of the correct step wise procedure of basic life support. 66% were aware that prolonged repetitive seizure with no recovery between attacks leading to a life-threatening emergency situation is known status epilepticus.45% believed that stress as the most common etiology for medical emergencies in dental practice. 56% were aware that Needle breakage is most commonly seen in IANB. 43% were aware that Extrinsic asthma is otherwise known as allergic asthma. 34% of them knew that Milk, Saliva, Isotonic saliva were mediums to carry avulsed tooth. Only 25% were aware that anti-coagulants, anti-platelet drugs and NSAIDs have potential to increase bleeding.48% were aware of the first aid to be given for a burn. 47% were aware of correct symptoms of hypoglycemia.40% believed that mild allergic reaction, followed by syncope 32% as the most common medical emergencies in dental office.38% believed that penicillin as the most common causes of drug induced anaphylaxis. Over results were not that promising in terms of awareness of medical emergencies in dental practice.

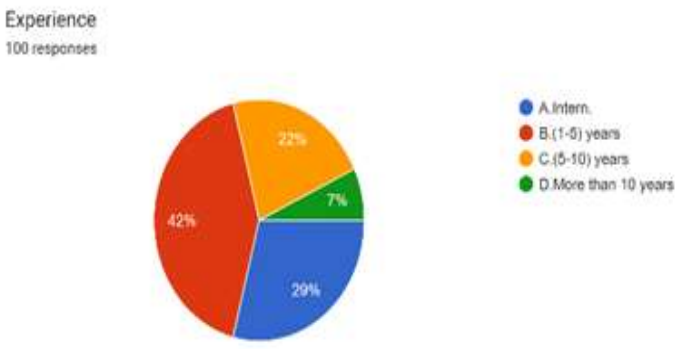

Figure 1

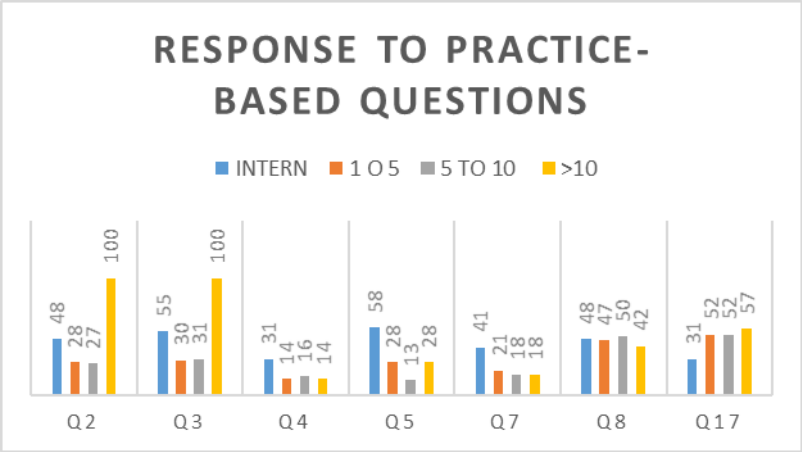

Figure 2

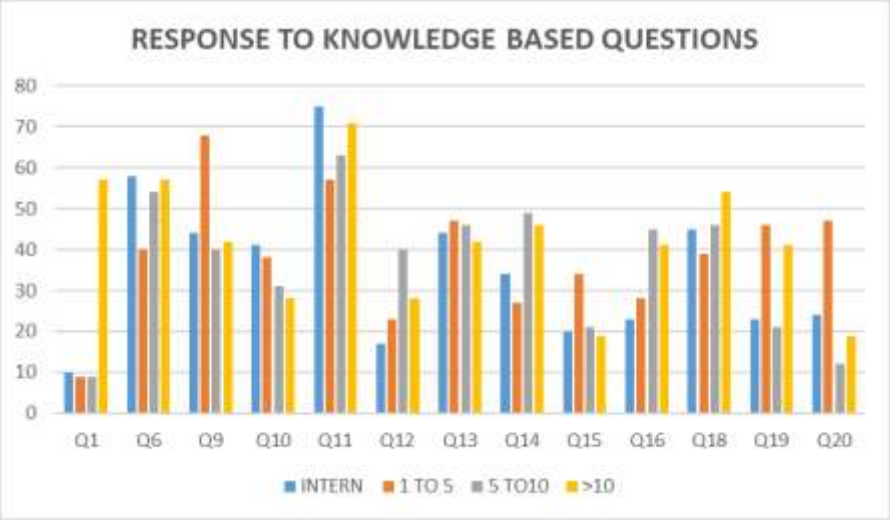

Figure 3

Table 1 : QUESTIONNAIRE	
QUESTION	OPTIONS
1.What is the ideal position for treating a patient who is having syncope?	A. Erect position B. Semi supine position. C. Trendelenburg position. D. Reverse Trendelenburg position
2.What is the definitive treatment for a patient, who is having seizure?	A. Diazepam B. Amphetamine C. Methamphetamine D. Opioids
3.What drug should be administered for a patient, who is suffering acute asthma attack?	A. Bronchodialators. B. Aspirin.

	C.NSAIDS. D. Beta blockers.
4.What are the methods that are used to control post extraction bleeding?	A. Application of gelatin sponge. B. Application of oxidized regeneratedcellulose. C. Application of topical thrombin. D. Application of collagen. E. All of these above
5.What is the first line drug for management for a patient suffering from angina pectoris in dental chair?	A. Beta blockers. B. Analgesics. C. Anti- epileptics. D. Antipyretics
6.In dental practice ,most common overdosage is caused by	A. Local anesthesia. B. Analgesics. C. Anti -epileptics. D. Antipyretics
7.What is the drug of choice in case of local anesthesia overdosage?	A. Anticonvulsants. B. Analgesics. C. Antipyretics D. Beta blockers
8.What is the drug of choice in case of latex allergy?	A. Antihistaminics B. Analgesics. C. Antipyretics D. Beta blockers
9.What is the immunoglobulin that gets suspended in response to allergic response?	A. IgA B. IgE C. IgG D. IgM
10.What is basic life support?	A. P>A>B>C B. A>B>P>C C. B>A>P>C D. C>B>A>P
11.A prolonged repetitive seizure with no recovery between attacks leading to a life threatening emergency situation is known as	A. Status epilepticus. B. Clonus. C. Tonus. D. Epilepsy
12.What is the most common etiology for medical emergencies in dental practice?	A. Stress. B. Pain. C. Local anesthesia. D. Dont know
13.Needle breakage is most commonly seen in:-	A. Inferior alveolar nerve block B. Infiltration. C. Anterior superior alveolar nerve block D. Posterior superior alveolar nerveblock
14.Extrinsic asthma is otherwise known as:-	A. Allergic asthma. B. Idiosyncratic asthma. C. Non atopic asthma D. Dont know
15.What is the medium used to carry avulsed tooth?	A. Milk. B. Saliva. C. Isotonic saliva D. All of these above
16.What are the drugs that can increase the bleeding risk?	A. Anti coagulants B. Antiplatelets. C.NSAIDS. D. All of these above

17.What is the first aid to be given for a burn?	A. Cool the burn under running water foratleast 10 minutes B. Cool the burn using ice for atleast 10minutes. C. Apply butter or other oinments on theburn D. Cover the burn using blanket
18.What is not a symptom of hypoglycemia?	A. Warm and dry skin B. Irritablity C. Sweating D. Lack of co ordination
19.What is the most common medical emergencies in dental office?	A. Syncope B. Anaphylaxis. C. Mild allergic reaction. D. Dont know
20.What is the most common causes of drug induced anaphylaxis?	A. Penicillin B. Tetracycline. C. Aminoglyconides. D. Dont know.

TABLE 2: FREQUENCIES and p-value by chi square test		N%	P-VALUE
1.What is the ideal position for treating a patient who is having syncope?	A	25	0.5458
	B	38	
	C	29	
	D	8	
	Total	100	
2.What is the definitive treatment for a patient, who is having seizure?	A	52	0.5647
	B	32	
	C	13	
	D	3	
	Total	100	
3.What drug should be administered for a patient,who is suffering acute asthma attack?	A	62	0.205
	B	14	
	C	15	
	D	9	
	Total	100	
4.What are the methods that are used to control post extraction bleeding?	A	30	0.2983
	B	24	
	C	13	
	D	9	
	E	24	
	Total	100	
5.What is the first line drug for management for a	A	60	0.225
	B	18	

patient suffering from angina pectoris in dental chair?	C	18	
	D	4	
	Total	100	
6.In dental practice, most common overdosage is caused by	A	56	0.955
	B	14	
	C	26	
	D	4	
	Total	100	
7.What is the drug of choice in case of local anesthesia overdosage?	A	39	0.796
	B	12	
	C	20	
	D	29	
	Total	100	
8.What is the drug of choice in case of latex allergy?	A	56	0.999
	B	11	
	C	12	
	D	21	
	Total	100	
9.What is the immunoglobulin that gets suspended in response to allergic response?	A	27	0. 588
	B	42	
	C	21	
	D	10	
	Total	100	
10.What is basic life support?	A	51	0.641
	B	24	
	C	16	
	D	9	

TABLE3: FREQUENCIES AND P-VALUE by chi square test		N%	P-VALUE
11.A prolonged repetitive seizure with no recovery between attacks leading to a life threatening emergency situation is known as	A	66	0.6077
	B	7	
	C	14	
	D	13	
	Total	100	
12.What is the most common etiology for medical emergencies in dental practice?	A	45	0.6868
	B	11	

	C	40	
	D	4	
	Total	100	
13.Needle breakage is most commonly seen in	A	57	0.6371
	B	7	
	C	23	
	D	13	
	Total	100	
14.Extrinsic asthma is otherwise known as:-	A	43	0.8919
	B	30	
	C	21	
	D	6	
	Total	100	
15.What is the medium used to carry avulsed tooth?	A	23	0.5693
	B	23	
	C	20	
	D	34	
	Total	100	
16.What are the drugs that can increase the bleeding risk?	A	41	0.1309
	B	16	
	C	18	
	D	25	
	Total	100	
17.What is the first aid to be given for a burn?	A	48	0.7969
	B	23	
	C	18	
	D	11	
	Total	100	
18.What is not a symptom of hypoglycemia?	A	47	0.9998
	B	12	
	C	16	
	D	25	
	Total	100	
19.What is the most common medical emergencies in dental office?	A	32	0.5888
	B	25	

	C	40	
	D	3	
	Total	100	
20.What is the most common causes of drug induced anaphylaxis?	A	38	0.6417
	B	30	
	C	27	
	D	5	

DISCUSSION:

According to the study by Ahamed & Kumar, 2016, India[4], 80% of respondents were confident in the autonomous treatment of most medical emergencies and had adequate knowledge of BLS, in comparison with our study 51%, in which experienced dentists had better knowledge. A study conducted by Albelaihi *et al*., 2017, Saudi Arabia[9] showed 40% of respondents believed antihistamines are primary drug of choice in anaphylaxis whereas in our study 56% were aware of this fact. In our study 47% of them were aware of the characteristics of hypo-glycemia, Khami *et al*., 2014[13], Iran study showed <60% of respondents were knowledgeable about hypoglycaemia characteristics, which was almost similar to our study. According to study by Vaughan et al[1] syncope was demonstrated to be the most common, representing 34.3% of all emergencies attended by a practitioner, almost similar 32% when compared to our study. Following syncope, the most common diagnosed conditions were reported to be epileptic episodes. According to Elanchezhiyan *et al*. 2013[5], India 56% of interns have trained in BLS, but their quality of medical emergency management and knowledge is very poor which the same in case of our study. Over-all the study showed that knowledge regarding medical emergencies is quite inadequate among all the dentists. Hence more awareness needs to be created among dentists.

CONCLUSION:

The current study showed that overall knowledge about medical emergencies among dentists was quite inadequate and limited to few areas. The prevalence of medical emergencies is increasing in dental practice, and data analysed in this study suggests that dental practitioners may be unprepared for their emergency management. Hence BLS program should be taught during the undergraduate days itself, it is also recommended that the knowledge of management of medical emergencies should be reinforced. Multiple awareness programs and discussion events should be planned or attended by the dentist which will enable them to be aware of medical emergencies which they might encounter during dental practice.

CONFLICTS OF INTEREST: None

REFERENCES:

[1]Vaughan, M., Park, A., Sholapurkar, A., Esterman, A. (2018) Medical Emergencies in the dental practice – management requirements and international practitioner proficiency. A scoping review. *Australian Dental Journal*, 63: 455– 466. https://doi.org/10.1111/adj.12649

[2]Jevon, P. Medical emergencies in the dental practice poster: revised and updated. *Br Dent J* **229**, 97–104 (2020). https://doi.org/10.1038/s41415-020-1789-y

[3]Lawson L. Medical emergency preparedness in dental practice

[4]Ahamed A, Santhosh Kumar MP. Knowledge, attitude and perceived confidence in handling medical emergencies among dental students. *J Pharm Sci Res* 2016; **8**: 645– 649.

[5]Elanchezhiyan S, Elavarasu S, Vennila K, *et al*. Awareness of dental office medical emergencies among dental interns in southern India: an analytical study. *J*

[6]Al-Shamiri HM, Al-Maweri SA, Shugaa-Addin B, Alaizari NA, Hunaish A. Awareness of basic life support among Saudi dental students and interns. *Eur J Dent* 2017; **11**: 521– 525.

[7]Kufta K, Saraghi M, Giannakopoulos H. Cardiovascular considerations for the dental practitioner. 2. Management of cardiac emergencies. *Gen Dent* 2018; **66**: 49– 53.

[8]Sangamesh NC, Vidya KC, Pathi J, Singh A. Awareness, attitude, and knowledge of basic life support among medical, dental, and nursing faculties and students in the University hospital. *J Int Soc Prev Community Dent* 2017; **7**: 161– 167.

[9]Alotaibi O, Alamri F, Almufleh L, Alsougi W. Basic life support: knowledge and attitude among dental students and Staff in the College of Dentistry, King Saud University. *Saudi J Dent Res* 2016; **7**: 51– 56

[10]Singh N, Kachwaha P, Singhal DK. Preparedness of dental students to manage medical emergencies in clinical dental set-up: a cross-sectional questionnaire survey. *Indian J Public Health Res Dev* 2018; **9**: 289– 294.

[11]New Zealand Dental Council. Medical Emergencies in Dental Practice - Practice Standard 2016.

[12]Haas DA. Management of medical emergencies in the dental office: conditions in each country, the extent of treatment by the dentist. Anesth Prog. 2006 Spring;53(1):20-4. doi: 10.2344/0003-3006(2006)53[20:MOMEIT]2.0.CO;2. PMID: 16722281; PMCID: PMC1586863.

[13]Khami MR, Yazdani R, Afzalimoghaddam M, Razeghi S, Moscowchi A. Medical emergency management among Iranian dentists. *J Contemp Dent Pract* 2014; **15**: 693– 698