

Prevalence of Medical Emergencies in Dental Clinics

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Abstract:

Aim:The aim of this research is to study the prevalence of medical emergencies in dental clinics.

Objective:The objective of this study is report the occurrence of medical emergencies in dental clinics and self perceived competence of dentists among chennai population. Medical emergencies in dental practice are generally perceived as being rare but when an emergency does occur it can be life-threatening.

Background:Dentists encounter medical emergencies in their clinic which can be life-threatening. The dental professionals expertise and skills in basic life support and the availability of essential emergency drugs and equipment can reduce the morbidity or mortality associated with medical emergency. As health care improves and life expectancy increases, dentists and dental students are treating a growing number of elderly and medically comprised patients,increasing the likelihood of a medical emergency during treatment.

Methodology:A self administered questionnaire was prepared and distributed to a random sample 50 dentists in chennai population in order to find the data on the prevalence of emergency events.

Results:Dental practitioners encounter medical emergencies, mostly benign ones but also, more rarely, life-threatening emergencies. 65% of dental practitioners reported adrenaline is most commonly used during medical emergency in dental clinics. The recommended emergency equipment for dental practices should be kept to the minimum necessary in order to increase the number of offices properly equipped.

Keywords:Medical Emergency, drugs, clinic, dentists.

INTRODUCTION:

Dentistry is a clinical activity potentially at risk of medical emergencies and dental practitioners need to be prepared to handle them effectively. (1).A medical emergency in the dental office may be an unexpected event that can include accidental or willful bodily injury, central nervous system stimulation and depression, respiratory and circulatory disturbances, as well as allergic reactions.Dentists, through their academic, clinical and continuing education, should be familiar with the prevention, diagnosis, and management of common emergencies. In addition, they should provide appropriate training to their staff so that each person knows what to do and can act promptly. As a result, dentists and their staff should be prepared to recognize, respond and effectively manage a medical emergency. Every dental practice has a duty of care to ensure that an effective and safe service is provided for its patients.The satisfactory performance in a medical emergency or resuscitation attempt in the dental practice has wide-ranging implications in terms of resuscitation equipment,resuscitation training,standards of care,clinical governance,risk management and clinical audit.(2)

Medical emergencies can occur at any time in the dental office. They can happen to anyone, from the anxious patient in the reception room to the elderly diabetic who was told to skip breakfast prior to coming to her appointment. They can happen to the receptionist with a seizure disorder or to the dentist experiencing prolonged chest discomfort. The best way to handle an emergency is to be prepared in advance. Whether the medical emergency occurs years in the future or this afternoon, preparation is the key. All health care providers should be prepared to recognize and handle medical emergencies in the office.The increasing numbers of older patients with significant medical problems requiring dental care, longer dental appointments, and the increasing use of new medications with complex interactions all increase the risk of a life-threatening problem occurring in the dental office. The majority of medical emergencies in the dental office, however, can be anticipated and avoided with appropriate risk reduction. One key to reducing risk is to take a health history and vital signs to identify the "at risk" patient. In some cases, extensive procedures on "at risk" patients might be best performed in a hospital setting(3). The aim of this study is to determine the prevalence of medical emergencies in dental clinics.

METHODOLOGY:

Study design:

In order to study the prevalence of medical emergencies in dental clinic, .structured questionnaire was made containing 3 survey

items. The sample was selected based on certain inclusion and exclusion criteria.

Inclusion criteria:

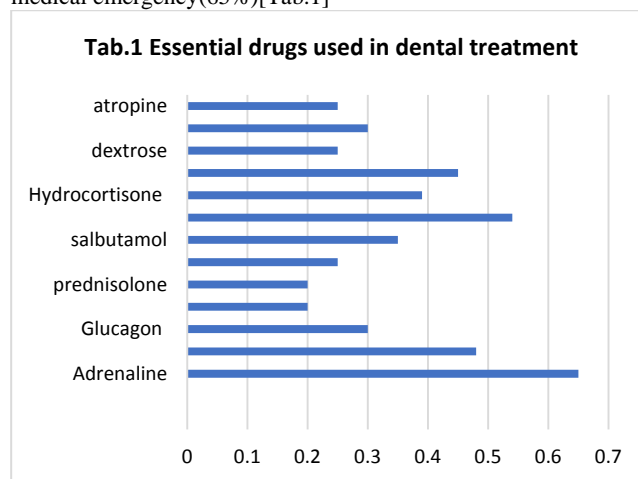
1. South chennai dental practitioners
2. Dental assistant

Exclusion criteria:

1. Students
2. Dental technicians

RESULT:

A total of 52 dental practitioners participated to answer the survey items. The essential drug used in the dental treatment includes adrenaline, aspirin, glucagon, glyceryltrinitrate, prednisolone, chloropheniramine, salbutamol, glucose, hydrocortisone, midazolam, dextrose, oxygen, atropine of which adrenaline accounts for the mostly used drug in the dental clinic during medical emergency(65%)[Tab.1]



Among dentists equipped with oxygen, 30% of the respondents reported to have used oxygen bottle in their dental clinics. Single use syringe seem to be the most common used equipment in dental clinic(60%).[Tab.2].

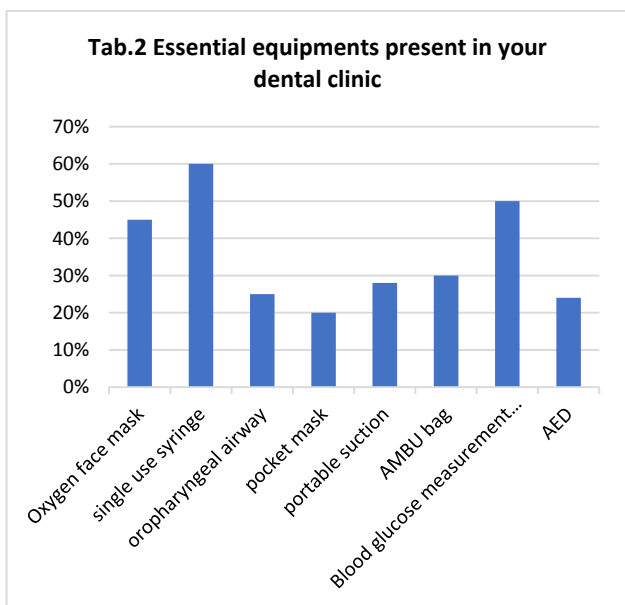
Furthermore, only a small portion of respondents have reported to have used the automated external defibrillator(24%). The dental practitioners are mostly confident is using the essential equipments in dental clinics(85%)[Tab.3] of which 20% of the respondents have reported that they are unsure of using the essential medical equipments in the dental clinics during any

medical emergency. The dental practitioners feel efficient in using the intramuscular injection[Tab.4]

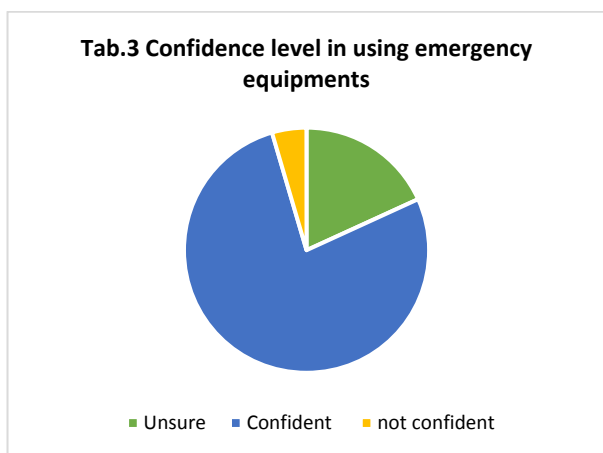
DISCUSSION:

The occurrence of medical emergencies in dental practice is a subject which has received scant attention in the dental literature during the past 20 years. This may be due, at least in part, to the difficulty in procuring meaningful and reliable data on this issue. Any study in this area, either prospective or retrospective, must be both large enough and cover sufficiently long a period of time to produce worthwhile information. A prospective study would require a monumental feat of organisation, keeping track of participants' whereabouts for the duration of the study, a need for persistent reminders to them to record events and anonymity would necessarily be lost, which might lead some to be economical with the truth on this potentially sensitive issue. Retrospective studies, comparatively easier to organise, suffer from a total reliance on participants for the interpretation and accurate recollection of the circumstances surrounding the onset, management and outcome of any incident over a period of a number of years. Vagaries of memory, especially in recollection of less major events, will almost certainly lead to inaccuracies of the information presented. A retrospective postal questionnaire study appeared to be the only means by which enough information could be gathered in a reasonable time.(4)The majority of practitioners who answered our survey reported having emergency equipment but one out of five respondents have no equipment at all. From a deontological and legal point of view this is questionable. Two-thirds of the dentists are equipped with oxygen but it is often outdated (unchanged for more than five years). This is probably to be connected with the fact that nearly 90% of the respondents have never had use of their oxygen. Defibrillators are also part of the recommended list of equipment for dental offices. Moreover, defibrillators should be available throughout outpatient medical facilities. However, only a small portion of respondents to our study reported having a defibrillator but the rate of offices equipped with defibrillator is increased compared to previous studies.(4) This lack of defibrillator has been explained by the feeling of dental practitioners that this device is not necessary in dental office, too expensive and not mandatory. This also reflects the low prevalence of cardiac arrest in dental offices. Self-confidence is the first step, necessary but not sufficient, to the competence. A large majority of respondents feel able to manage a malaise while less than half feel able to manage a cardiac arrest. Other studies which have examined dental practitioners self-confidence about medical emergencies observed that they are comfortable with the management of a malaise [5]. However, it seems normal that practitioner feels capable of handling a situation they meet regularly and feel less comfortable with a situation they have probably never met. Good results reported by respondents should be moderate because self-estimation is not the reflection of the competence. Concerning resuscitation, several studies showed that self-estimation of competence is often higher than actual performance [6]. The lack of data about medical emergencies in dental practice perpetuates unnecessary habits in equipment and in the education of dental surgeons. For example, a significant proportion of dental practitioners have intravenous injection equipment and intravenous drugs which may be unnecessary and inappropriate for this category of healthcare professionals. Our results must be moderated by the fact that our survey was based on a voluntary online questionnaire. This type of data collection is prone to selection bias. Furthermore because the survey involves recall, results reflect the respondent's recollection of events. Moreover, while the number of respondents is large, the actual response rate represents only a small proportion of the total population of south chennai dental practitioners.

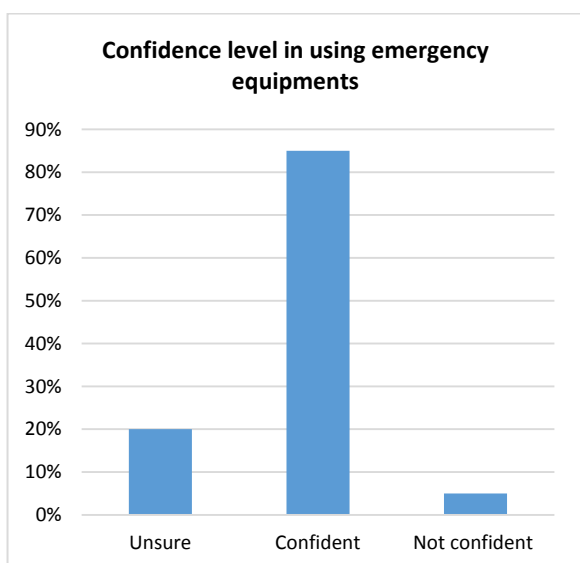
Tab.2 Essential equipments present in your dental clinic



Tab.3 Confidence level in using emergency equipments



Confidence level in using emergency equipments



CONCLUSION:

Dental practitioners encounter mostly minor medical emergencies, not uncommonly in practice. Even if life-threatening emergencies and cardiac arrest are rare in dental practice, those situations can occur. Dental staff should be equipped and prepared to face them. A dentist will encounter an average of two medical emergencies per year in his office, mostly vasovagal reactions, orthostatic hypotension or hypoglycemia. The training of dental practitioners to handle medical emergencies is not sufficient. The rate of practitioners never trained or for whom the last training took place more than four years ago is probably too high. Efforts should be made in the education of dental practitioners regarding the management of medical emergencies during initial and continuing dental education. Ideally, the training should be on an annual basis. The recommended emergency equipment for dental practices should be kept to the minimum necessary in order to respond to the real needs of practitioners and increase the number of offices properly equipped. All these data provide a better understanding of medical emergencies in dental practice and should improve the care of patients presenting with medical

emergencies in dental practice, particularly through recognition of the most suitable equipment and training for dental practitioners.

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