Original Article

Medical Emergencies in Dental Practices Pak Armed Forces Med J 2011; 61 (4): 602-5

MANAGEMENT OF MEDICAL EMERGENCIES IN DENTAL PRACTICES-AN AUDIT

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ABSTRACT

Objective: To assess the knowledge, preparedness and practices of the dental practitioners to recognize and manage medical emergencies occurring in their dental practices.

Study design: Descriptive; Cross-sectional Study

Place and duration of study: Carried out in 126 clinics of Pakistan Medical and Dental Council (PMDC) registered dentists in Rawalpindi/Islamabad over a period of 06 months from September 2009 to March 2010.

Subjects and methods: A questionnaire and an observation Proforma were used for data collection. The questionnaire and observational proformas were distributed among 160 randomly selected dental clinics by the authors out of which 126 completed performas and questionnaires were returned. Collected data was analyzed using SPSS version 17.

Results: Majority (73.8%) of the dental practitioners believed that they were appropriately trained either in their undergraduate or postgraduate training in recognition of medical emergencies. However most of these clinicians felt that they were not adequately trained in the management of these emergencies and only 29.4% of the dentists had taken Basic Life Support courses. A good number of the dental clinics had little or no equipment or medicaments for management of common medical emergencies. Only 49.6% of the dental practitioners claimed that they were satisfied with their preparedness regarding management of medical emergencies.

Conclusion: Good majority (73.8%) of our dental practitioners are able to recognize medical emergencies, however, their resourcefulness in terms of their management is seriously lacking.

Keywords: Medical Emergency, Dental Clinics

INTRODUCTION

A medical emergency is a sudden and unexpected onset of an illness or injury that is acute and poses an immediate risk to patient's life[1]. Although the incidence is not high, medical emergencies can and do arise in the dental setups and some, if not all, can be life threatening. Vasovagal syncope, hypoglycemic and anaphylactic shocks, epileptic fits etc are some of the more common emergency conditions that can be encountered in the dental office. Timely diagnosis and prompt management can save lives in these conditions. Mismanagement, on the other hand, can lead to serious morbidity and /or mortality for the patient. Every dental setup should therefore be prepared to handle all expected medical emergencies effectively. Such preparedness would include knowledge and skill of the clinician, training of clinical staff, and availability of emergency drugs and equipment in the dental clinics. Additionally dental clinics must have liaison and prior arrangements with a nearby hospital to which patients can be shifted quickly in acute emergency condition.

Numerous studies have been carried out on medical emergencies in different countries[2-7]. These studies have mainly been focused at determination of the most commonly occurring medical emergencies[8] in the dental chair and the ability of the practitioners to manage them[2-7,9]. This study, however, mainly assessed the preparedness of dentists in their practices to manage medical emergencies.

SUBJECTS AND METHODS

A descriptive, KAP (knowledge, attitude and practices) study using a self administered questionnaire and an observational proforma, was conducted in the clinics of PMDC registered dental practitioners in Rawalpindi and Islamabad. The questionnaire had 20 closed

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Received: 10 June 2010; Accepted: 04 May 2011

ended questions and was meant to evaluate the knowledge and preparedness of the dentists to recognize and manage medical emergencies in their clinics. The observational proforma was designed to check the availability of equipment/ resources of dental clinics to cope with these conditions.

After obtaining consent from the ethics committee of Army Medical College and Armed Forces Institute of Dentistry, the questionnaire and observational proforma were tested in a pilot study and appropriately modified. The final questionnaire and observational proforma were distributed among 160 randomly selected dental clinics by the authors personally. Participation in the study was optional and with the consent of clinicians. An effort was made to get back the completed questionnaires and proforma the same day. The clinic was visited a second time the next day and those who had not completed the questionnaires were dropped from the study. All statistical calculations were done using SPSS version 17.

RESULTS

Out of 160 clinics, 126 responded (response rate 78.75%). Sixty nine (54.8%) of the participants had basic dental qualification and 57 (45.2 %) were specialists with different postgraduate qualifications. Majority (70.6%) of the graduate dentists reported that management of medical emergencies was part of the curriculum in undergraduate studies and house job / internship. Only 30.2% of the postgraduates claimed that management of medical emergencies was an essential component of their training. However, this response varied between postgraduates of different specialties.

The various aspects of training received by dental practitioners for medical emergency recognition and management are summarized in figure 1.

A good number of respondents were not very confident in relieving foreign body obstruction (60.20%), I/V drug administration (43.10%), administering inhaled bronchodilators (50%), providing mouth-to-mouth breathing (45.60%) and cardiac compression (41.80%). Self-perceived competence to carry out basic treatment measures is summarized in table.

Adrenaline and glucose were among the most commonly available drugs kept by the dentists (70.60% and 69% respectively). Around 65% of the dental offices did not have oxygen supply apparatus for supplemental oxygenation, glycerol trinitrate or inhalational bronchodilators. Less than 60% of these clinicians had sphygmomanometer for blood pressure determination and its monitoring. Emergency drugs and equipment possessed by the dentists are summarized in figure 2.

Emergency phone numbers were easily accessible to 86.3% dentists, whereas 63.1% of them said that ambulance can be arranged for within 5-10 min in case of emergency. Majority (78.3%) of dentists had prior arrangements with hospitals, whereas, 90.8% dental clinics had hospitals at a distance of 5-10 minutes drive. Emergency drills were undertaken by 16.7% dental practitioners. Only 49.6% of the dentists were themselves satisfied with their preparedness regarding medical emergencies.

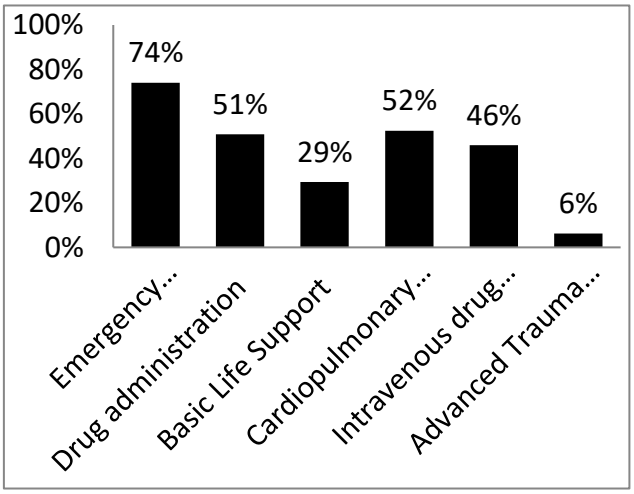

Fig.1: Various aspects of training received by dentists (n=126)

DISCUSSION

The most important step in management of medical emergencies is the recognition of emergency situation[7]. In this study, 74% practitioners recalled having training in recognition of medical emergencies. In comparison, studies carried out in Great Britain

Table-1: Self-Perceived Competence to carry out Basic Treatment Measures (n=126)

Emergency Treatment Measures	Self Perceived Competence		
	Well	Not very well	Not at all
Administering Inhaled Bronchodilators	50%	36.40%	13.60%
I/V Drug Administration	56.90%	28.50%	14.60%
Providing Supplemental Oxygen	52.60%	27.60%	19.80%
Relieving Foreign Body Obstruction	39.80%	46.60%	13.60%
Cardiac Compression	58.20%	28.70%	13.10%
Mouth to Mouth Breathing	54.40%	33.60%	12%

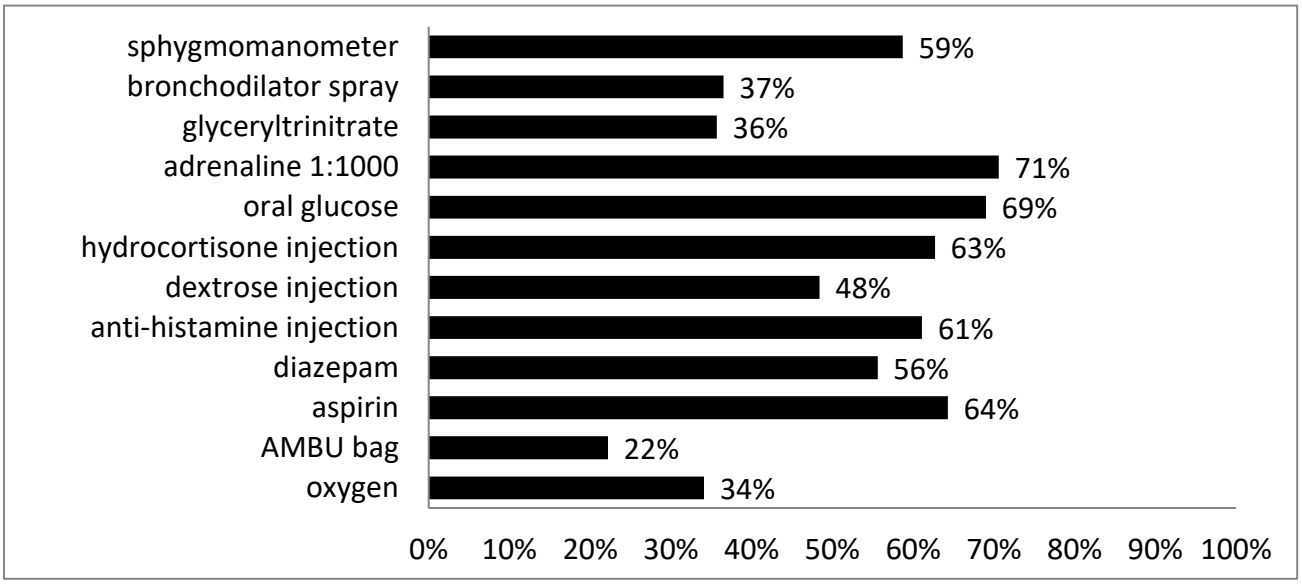

Fig.2: Emergency drugs and equipment possessed by the dentists (n=126)

by Atherton et al.[6] and in India by Gupta et al.[7] revealed 76% and 92% of practicing clinicians received training in recognition of medical emergencies at undergraduate level.

In this study 30.6% of the respondents undertook additional courses after their undergraduate studies in management of medical emergencies. In comparison Atherton et al.[5] have reported that 95% dentists took training in management of medical emergencies after their graduation.

First and foremost in emergency management is the ability to effectively provide basic life support (BLS).[12] In the present study only 29% dentists had undertaken BLS course. The American Dental Association (ADA) recommends all dental health care professionals to receive regular training in BLS.[12]

In this study 52% respondents reported to have been trained in cardiac pulmonary resuscitation (CPR). Gupta et al.[7] have reported that 18.5% undergraduates & 25% postgraduates received training in CPR. In a study by Atherton et al.[6] Ninty three point nine and 98.9% recalled training in CPR during undergraduate & postgraduate training, respectively. In a study Hussain et al.[13] concluded that more emphasis should be placed on CPR training in undergraduate courses.

The availability of emergency drugs and equipment in any dental facility is an important prerequisite for efficient management of medical emergencies. The ADA Council on Scientific Affairs recommends that all dental offices should maintain at least the basic recommended emergency equipment and drugs. In our study epinephrine 1:1000 (injectable) was available in 71%, glucose in 69%, aspirin in 64%, histamine blocker (injectable) in 61%, bronchodilator spray in 37%, nitroglycerine in 36% and oxygen with positive pressure capability in 34% dental

clinics. The fact that some of the dental practices were working without the basic armamentarium and medications required in the early management of various medical emergencies, was alarming.

It is important for every dental practitioner to have liaison with a hospital or facility which can efficiently manage medical emergencies.[13] Some of the more encouraging findings in this study were that 78.3% dentists had prior arrangements with hospitals for management of emergency situations and 63.10% had access to ambulance. This was similar to the findings by Gupta et al.[7] in which 75% had prior arrangements with hospitals. One of the main reasons for this finding may be related to the fact that most of the clinics visited in this study were clustered in very close proximity to medical facilities which was also evident by the fact that more than 90% of these dental practices were at less than 10 min drive from nearest hospital.

The results of this study cannot be applied to dental clinics in general as they only represent a small sample of dental clinics from two major cities of Pakistan. A large scale study is recommended for in depth evaluation of the situation in the country as a whole.

CONCLUSION

Dental practitioners of Rawalpindi and Islamabad are able to recognize medical emergencies, however many of them are either not appropriately trained to deal with these situations or they have inadequate resources to manage medical emergencies.

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