

## CARDIOPULMONARY RESUSCITATION: KNOWLEDGE AND PERSONAL EXPERIENCE IN IRANIAN DENTISTS

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### ABSTRACT

This work describes the knowledge and experience of dentists about cardiopulmonary resuscitation (CPR). A total of 273 dentists working at Shiraz, Iran were interviewed: 55% felt that they are able to define CPR, although only 37% had a correct concept; 51% believed they were able to perform CPR, however, none of them had received practical training in CPR; 4% of the interviewed professionals mentioned the occurrence of cardiopulmonary arrest in their dental office. The authors feel that dental surgeons in Shiraz, Iran should be better trained to manage medical emergencies which they may face in dental practice.

**KEY WORDS:** Dentistry, Cardiopulmonary arrest, Cardiopulmonary resuscitation.

Pak J Med Sci April 2007 Vol. 23 No. 2 296-297

### INTRODUCTION

Cardiopulmonary arrest (CPA) is a sudden stop of respiratory movement or effective circulation. Cases of patients with chronic diseases or terminal malignancies must be excluded.<sup>1</sup> CPA is the most urgent of emergencies and consequently, diagnosis must be made as soon as possible. The tolerance of the heart to anoxia is relatively high, but the central nervous system will show irreversible lesions if anoxia lasts more than 3 to 4 minutes.<sup>2</sup> Though unusual, there are reports of deaths due to CPA in dental offices during dental treatment.<sup>3-5</sup> Little has been published about competence of dentists to deal with CPA, or the occurrence of resuscitation emergencies in dental practice.<sup>6-9</sup>

All health professionals, including dentists, must be well trained to attend to and manage

medical emergencies. Besides training in basic techniques of resuscitation, such as mouth-to-mouth ventilation combined with cardiac compression, other procedures can also be useful. Dentists should have at hand and be trained to use a laryngoscope, oropharyngeal tube, Ambu mask, oxygen balloon and drugs, such as epinephrine, lidocaine. Believing that dentists were well trained to perform cardiopulmonary resuscitation (CPR), this study was conducted to investigate their CPA experience in the dental practice and the CPR knowledge among the dentists in Shiraz, Iran.

### SUBJECTS AND METHODS

A total of 273 dentists from Shiraz, Iran were interviewed regarding their experience and knowledge about CPR and occurrence of CPA in their offices from March 2002 to May 2004. The dentists were advised to answer the questions without resorting to literary material or other professionals.

### RESULTS

Out of two hundred seventy three dentists who participated in this survey, twenty two (8%) had personally observed CPR while eleven (4%) reported they had experienced it in their dental practice. A vast majority 251 (92%) had

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\* Received for publication September 24, 2006

\* Revision Accepted December 26, 2006

never observed it while 262 (92%) had never experienced it.

Fifty-five percent said they knew what CPA is, but only 37% answered correctly the concept of CPA. About half of the dentists (51%) considered they were able to perform CPR. Although 70% had received information about CPR, most of them had not received practical training for resuscitation.

## DISCUSSION

Cardiopulmonary arrest may occur in the dental office<sup>3,4,10</sup> and deaths have also been reported.<sup>3-5</sup> There are few surveys about the subject and none with Iranian dentists. The lack of training and inability to cope with these emergencies can lead to tragic and legal consequences.

Chapman<sup>9</sup> found that 64% had received information about the subject versus 70% found in this study. Theoretical information with demonstrations, but without practice, probably is not enough to ensure CPR competence. Comparing our data with other studies, it was observed that as to theoretical knowledge Hussain<sup>7</sup> found correct concept in 52% of the assessed professionals versus 37% in our study. Chapman<sup>6</sup> and Hussain,<sup>7</sup> evaluating dentists about CPR, reported that all failed the practical assessment. As regards their declaration that they were capable to perform CPR, our results were similar to those reported in other studies, showing an average of above 50%.<sup>6-9</sup> In developed countries, with a higher level of education, this probably could be extended to most of the population.<sup>11</sup> Nevertheless, the literature about CPR shows that the subject is of high concern in dentistry in Australia,<sup>6</sup> Italy,<sup>12</sup> the United Kingdom<sup>7</sup> and the USA.<sup>13, 14</sup>

A total of 8% of the 273 surveyed dentists reported to have witnessed CPA outside the dental office, but only 4% (11 of 273) had patients with CPA in their dental office. In fact, these 11 patients died in the dental office. We could not confirm this information because the questionnaires were not signed, but we consider them to be correct. This observation is extremely relevant, and it emphasizes the impor-

tance of the subject and the necessity for a better discussion and consciousness of the dental profession. In relation to having had an actual experience of cardiac arrest in the office, Chapman<sup>6</sup> in 1995 reported 5% versus 4% of the interviewed dentists in our study in contrast to 14.2% reported by Chapman<sup>9</sup> in 1997.

## CONCLUSION

The participation of educational institutions to improve the training of students and professionals for CPR and other medical emergencies that can occur in the dental office is also necessary. Iranian dentistry has made tremendous progress in different sub-specialties of dentistry. A better knowledge of medical emergencies is essential for further development of dentistry in Iran. This will ensure provision of better dental healthcare and to provide better and safer service for the population. Hence it is recommended that CPR techniques must be taught to all health professionals in developing countries such as Iran.

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