ISSN: 0974-2115
www.jchps.com Journal of Chemical and Pharmaceutical Sciences

Recurring pains in ischemic heart disease patients

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ABSTRACT

Background and aim: the aim pf the present was to assess the prevalence of oral and maxillofacial pains among patients who referred to the hospital because of pain chest pain and diagnosed with ischemic heart disease.

Material and methods: in the present cross-sectional study 350patients, including 199 male and 151 female, were examined. The required data were gathered from patients' medical records as well as by interviewing with them and their families. Moreover, oral examinations were conducted using the tongue blade in the presence of daylight. The data were analyzed by SPSS software package version 18.

Results: a total number of 102 patients (19.1 percent), including 50 male and 52 female, experienced a maxillofacial pain. Moreover, the left side of mandible (18.63 percent) and upper part of the throat (16.67 percent) were the most prevalent regions in which pain was experienced by patients, while the right side of maxilla and tongue were the regions with the least prevalence of pain.

Conclusion: considering the high prevalence of oral and maxillofacial pains in patients suffering from ischemic heart diseases that among some of them these types of pain is the only disease manifestation, it is recommended to consider the possibility of such diseases among patients suffering from oral and maxillofacial pains to avoid unnecessary dental treatments.

KEY WORDS: recurrent pain, chest pain. Oral and maxillofacial pain, ischemic heart disease.

1. INTRODUCTION

Ischemic heart disease is a major cause of morbidity and mortality in adults. A common clinical symptom of cardiac ischemia is chest pain which may spread in other regions of body, including the shoulders, arms and neck. It is also possible for people who suffering from such a disease to experience some level of pain in craniofacial regions of their bodies (Herlitz, 1992; Kreiner, 2014). Therefore, a wrong diagnosis of the craniofacial pain originated from a heart ischemic disease can lead to unnecessary dental treatments. Moreover, the differentiation of pains caused by ischemic diseases from dental pain is of high importance in early diagnosis and treatment of ischemic diseases (Balasubramaniam, 2011). In developing countries, lack of diagnosis or misdiagnosis of acute myocardial infarction occurs in 2-27 percent of cases among which 25 percent cases will lead to patient death. The absence of pain in chest and/or an unincreased segment-ST in electrocardiogram are some factors which make it difficult to diagnose myocardial infarction. Accordingly, it has been estimated that the probability of death among patients who do not experience chest pain is three times higher than those who experience such pains (Lopez-Lopez, 2012; Yang, 2010; Rasolabadi, 2015).

Considering the fact that craniofacial pains are more common than recurrent pains in the shoulder and arms in these situations, patients tend to refer to a dentist at first (Balasubramaniam, 2011; Jahangiri, 2016). As a consequence, there is high possibility for them to undergo unnecessary dental treatments which not only do not have any effect on their pains but also cause a delay in their required and necessary treatments which may threaten their lives. According to above mentioned issues, determining the prevalence of oral and craniofacial pains among patients suffering from heart ischemic disease in a specific population would help physician and dentist to diagnose such an important disease as soon as possible and prevent them to implement unnecessary dental treatment, so the present study was set to investigate the prevalence of oral and craniofacial pains among patients suffering from chest pain admitted to cardiology ward of the Ekbatan hospital complex in Hamedan, Iran.

2. MATERIAL AND METHOD

Data acquisition: In the present cross-sectional study, 350 patients, including 199 male and 151 female, admitted to the cardiology ward of the Ekbatan hospital complex located in Hamedan, Iran, were investigated. The required data were gathered from the medical records of patients, by interviewing with the patients and their families based on the Rose angina questionnaire (introduced by WHO), and also by examining them with a tongue blade under the presence of daylight.

Variables of the study: Patients' demographic information, hypertension, blood pressure, smoking, diabetes mellitus, dyslipidemia, family history of heart disease and personality type were the variables recorded in the questionnaire related to each patient (Rasolabadi, 2015a). Moreover, the patients were asked to explain whether they have referred so far to a dentist because of their oral and craniofacial pains or not. If affirmative, they were asked about the type of treatment received (root canal therapy, extraction, and non-emergency treatment of TMJ).

Furthermore, the patients were asked about the regions of their oral and craniofacial area in which the highest level of pain had been experienced.

Data analysis: The data were analyzed employing SPSS software package version 18.

3. RESULTS

As mentioned before, 350 patients, including 199 male and 151 female, were investigated in the present study. The patients were aged in a range from 22 to 90 years, most of them were above 45 years old (328 cases or 93.7 percent of participants).

A total number of 102 patients (29.1 percent of all participants) had experienced pain in their oral and craniofacial regions of their bodies. Moreover, the left side of the mandible was the most prevalent region in which the patients had experienced pain (18.63 percent), whereas, the right side of the maxilla and tongue were those regions in which the lowest prevalence of pain was observed (8.82 percent). It is worth mentioning that the craniofacial pain was the only symptom of the heart ischemic disease in two patients. Furthermore, six patients explained that their pain had begun from the craniofacial regions and then spread to other parts of their bodies. Fifty percent of patients who had experienced pain had a history of hypertension and 10.7 percent of them (11 patients) had treated their TMJ.

Table.1. The distribution of craniofacial pains between male and female

History of pain gender	Patients with craniofacial pains (%)	Patients without craniofacial pains (%)	Total (%)
Male	50 (25.1)	149 (74.9)	199 (100)
female	52 (34.5)	99 (65.5)	151 (100)
Total	102 (29.2)	248 (70.8)	350 (100)

Table.2. The association of craniofacial pains and patients' age

History of pain Age	Patients with craniofacial pains (%)	Patients without craniofacial pains (%)	Total (%)
Above 45 years	96 (29.2)	232 (70.7)	328 (93.7)
Under 45 years	6 (27.3)	16 (72.7)	22 (6.3)
Total	102 (29.2)	(248 (70.8)	350 (100)

Table.3. The presence of recurrent craniofacial pains in respect to various risk factors

History of pain Risk factors		Patients with craniofacial pains (%)	Patients without craniofacial pains (%)
Hypertension		110 (44.3)	52 (50.99)
Diabetes		55 (22.2)	24 (23.5)
Smoking		70 (28.2)	28 (27.5)
Dyslipidemia		61 (24.6)	28 (27.5)
Family history of heart disease		81 (32.6)	40 (39.2)
personality type	A	179 (72.2)	71 (69.6)
	B	69 (27.8)	31 (30.4)
A history of chest pain		95 (38.3)	41 (40.2)
A history of TMJ pain		13 (5.3)	11 (10.7)

DISCUSSION

Acute Myocardial Infarction without chest pain is a major risk, because in such cases, the disease is difficult to diagnose, the patient will not receive necessary treatment, resulting in a high mortality risk. One of the main reasons contributing in misdiagnosis of IMA is the presence of pain in craniofacial regions, which is more prevalent in comparison with the recurrent pain one may experience in the arms and shoulders and more than half of the patients just experience craniofacial pain during ischemia (Mann, 2014). Forasmuch as IMA patients without chest pain are at a higher risk, the present study was set to address the association among craniofacial pain, heart ischemic disease, and other common risk factors such as hypertension, smoking, character type, a history of TMJ pain, a history of chest pain, and family history of heart disease.

In the present study, although 56.9 percent of patients were male, the prevalence of craniofacial pains was higher in female. The finding is in line with the results of Keiner, (Kreiner, 2007), however, it is in contradiction with those reported by Salehi, (SALEHI, 2011). An important risk factor in heart disease is the age above 45 years old. In the present study we observed that 93.7 percent of patients were above 45 years old, which is in agreement with the results of studies carried by Salehi, (SALEHI, 2011), Kreiner, (Kreiner, 2007), Baldi and Ferrarini (Baldi and Ferrarini, 1995), and Dalband, (Dalband, 2011). Furthermore, similar to the study carried out by Kreiner,

(Kreiner, 2007), there was no association between craniofacial pains and common risk factors of heart disease such as hypertension, smoking, dyslipidemia, family history of heart diseases and character types. Diabetes is a major risk factor in developing atherosclerotic disease, and its association with ischemic diseases especially in older people has been confirmed (Yang, 2010, Donahoe, 2007). In the present study, 22.6 percent of all patients and 23.5 percent of patients with recurrent pains were suffered from diabetes. The results are consistent with previous studies conducted by Kreiner, (Kreiner, 2007) and Franco, (de Oliveira Franco, 2005).

Family history is another important risk factor in the development of ischemic heart disease. In the present study, 34.6 of all patients and 39.2 of patients with the recurrent pains had a family history of heart diseases, these values were reported as 47 and 55 percent by the study carried out by (Kreiner, 2007), respectively. Further, it was observed in the present study that most patients had type A personality (71.4 percent of all patients and 69.6 percent of patients with recurrent pains).

Moreover, only one patient had referred to a dentist for treatment. (Dalband, 2011), Franco, (de Oliveira Franco, 2005), and (Franco, 2006) explained that many patients referring to a dentist because of pain in TMJ may actually suffer from heart ischemic disease, so such a disease should be always considered as a possibility in these patients. In the present study, two patients (0.6 percent of all patients) explained that the onset of pain was from the oral and facial regions of their bodies and after a few days the pain was spread to other regions including their chest. (Kreiner, 2007; Kreiner, 2014) described that in six percent of patients the onset of the pain was from the oral and facial regions of their bodies. It is worth mentioning that there have been some studies which have explained that the oral and facial pains in some cases is the only clinical symptom of heart ischemic disease (Dalband, 2011; de Oliveira Franco, 2005; Franco, 2006; Batchelder, 1987). The left side of the mandible and the upper part of throat were the most prevalent regions where patients experienced pain. These results were compatible with those of Kreiner, (Kreiner, 2007). In contrast, the right side of the maxilla and tongue were the least prevalent regions in which patients experienced pain, the results are partially consistent with those of Kreiner, (Kreiner, 2007) and Fazlyab, (Fazlyab, 2015).

4. CONCLUSION

Pain due to ischemic heart disease may occur in different parts of the body, especially in the oral and facial regions. Therefore, dentists should always consider such a disease as a possible cause of pain in the oral and facial regions, especially when such pains are intensified with angriness and excitement.

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