

Prevalence of the patients with history of hepatitis in a dental faculty

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Received: 9-03-2005

Accepted: 22-06-2005

İlgüy D, İlgüy M, Dinçer S, Bayırlı G. Prevalence of the patients with history of hepatitis in a dental faculty. *Med Oral Patol Oral Cir Bucal* 2006;11: E29-32.

© Medicina Oral S. L. C.I.F. B 96689336 - ISSN 1698-6946

Indexed in:

-Index Medicus / MEDLINE / PubMed
-EMBASE, Excerpta Medica
-Índice Médico Español
-IBECs

ABSTRACT

Objectives: The aim of the study is to investigate the prevalence of the dental patients who had a history of hepatitis.

Study design: A total of 13.527 records of patients who were examined between October 1, 2002 and October 1, 2004 were reviewed retrospectively. The medical histories of patients were taken before routine clinical and radiographic examination. A dental software program was used for the collection of data. The chi-square test was utilized to evaluate correlations between different parameters.

Results: The percentage of the patients who had a medical history of hepatitis was 7.9% (n=1065). Within the total patients; history of hepatitis A was found as 3.2% (n=438), hepatitis B was 2.3% (n=308), hepatitis C was 0.1% (n=16). The frequency of the patients who were hepatitis B carriers was 0.8% (n=113) and 17% (n=181) of patients did not know which type of hepatitis they had suffered from.

Conclusions: Because dentists are particularly at risk for contacting hepatitis, a strict sterilization procedure is mandatory to prevent the transmission.

Key words: Prevalence, hepatitis, hepatitis carrier, dental patients, medical history.

INTRODUCTION

Hepatitis infections are community health problems in developing countries (1). A number of patients become chronic carriers of hepatitis antigen and are potentially infectious (2). Routes of transmission include vertical (mother to child or generation to generation through close contact and sanitary habits), early life horizontal transmission (through bites, lesions, and sanitary habits), and adult horizontal transmission (through sexual contact, intravenous drug use, and medical procedure exposure) and are evident to varying degrees in every country (3).

Hepatitis B and C infections are very important for dentists because of its transmission route. The dentists are particularly at risk because of exposure to the oral secretions and blood of potentially infectious patients (2). Before dental treatment, a

detailed medical history should be taken to detect the patients with hepatitis. A few data are available regarding the frequency of hepatitis among the dental patients in Turkey. The aim of the study is to investigate the prevalence of the patients who had a history of hepatitis in a dental faculty. The study is based on patient self-reporting.

METHODS

A total of 13527 records of patients who were examined between October 1, 2002 and October 1, 2004 were reviewed retrospectively. The study group consisted of adult patients, ages varying between 16 and 105 years, who were referred to our Oral Diagnostic Clinic for an oral examination and a dental treatment plan. The medical histories of patients were taken before routine clinical and radiographic examination. In cases

of poor historians, additional information was obtained from the subjects' family members. There were 24 main questions and each contained one or more further specific questions. If a patient was currently under the management of a physician (that is, receiving medicines and regular examinations) on the day of the first examination at our department, or if the patient had previously been diagnosed as having organic or functional disorders caused by past diseases, the patient's answer was recorded as "yes". The questions related with hepatitis were: 1) Have you ever had any types of hepatitis and if yes which type? 2) Have you ever been under the management of a physician because of hepatitis? 3) Are you a carrier? The answers to these questions were evaluated for the present study. A dental software program was used for the collection of data. The chi-square test was utilized to evaluate correlations between different parameters.

RESULTS

Of 13527 patients who participated in the study, 5260 were males (39%) and 8267 were females (61%). The average age of the patients was 44.35 years (range from 16 – 105 years) with a standard deviation of 17.36 years. The study group was divided into eight age groups. Table 1 shows the age ranges of the patients.

The percentage of the patients who had a medical history of hepatitis was 7.9% (n=1065). Within the total patients; history of hepatitis A was found as 3.2% (n=438), hepatitis B was 2.3% (n=308), hepatitis C was 0.1% (n=16). The number of patients with acute hepatitis was only nine. Among the patients who had the history of hepatitis, 17% (n=181) of patients did not know which type of hepatitis they had suffered from. The frequency of the patients who were hepatitis B carriers was 0.8% (n=113). Interestingly, no patient was detected with history of HIV infection.

Table 2 shows the distribution of types of hepatitis according to gender. Hepatitis A was observed more frequently among females with a percentage of 3.5% (n=289) and the result was statistically significant (p<0.05). Hepatitis B and C were found more frequently among males with percentages of 2.7% and 0.2% respectively and the result was statistically significant (p<0.05).

In Table 3, it can be observed that 3.3% of the patients with hepatitis C was alcoholic. A statistically significant correlation was found between alcohol usage and presence of hepatitis C (p<0.0001).

Table 1. Numbers of the patients according to age groups.

Age groups	n	%
16-20 years	1044	7.7
21-30 years	2430	18
31-40 years	2638	19.5
41-50 years	2559	18.9
51-60 years	2296	17
61-70 years	1338	9.9
71-80 years	964	7.1
>81 years	258	1.9
Total	13527	100

Table 2. Distribution of types of hepatitis according to gender.

	Male		Female		
	n	%	n	%	
Hepatitis A	149	2.8	289	3.5	p<0.05
Hepatitis B	141	2.7	167	2	p<0.05
Hepatitis C	11	0.2	5	0.1	p<0.05

Table 3. Relationship between alcohol usage and hepatitis.

	Alcohol (-)		Alcohol (+)		
	n	%	n	%	
Hepatitis A	433	3.2	5	5.6	p>0.05
Hepatitis B	304	2.3	4	4.4	p>0.05
Hepatitis C	13	0.1	3	3.3	p<0.0001

DISCUSSION

Hepatitis is a world-wide problem. There are five million new cases every year (4). Chandler et al. (4) evaluated 716 dental patients according to their medical histories and found the prevalence of hepatitis as 3.7% in Spain. Jankittiwong et al. (5) found the prevalence of infectious diseases as 1.2% in 510 elderly who were interviewed for their medical histories in Thailand. In the present study the prevalence of the patients who had a history of hepatitis was 7.8%. Since Turkey is a developing country and an area of intermediate endemicity, the prevalence of hepatitis is high.

Hepatitis A virus (HAV), being an enteric transmitting virus world wide, occurs mostly in developing countries (6). Carrilho et al. (7) stated that, the prevalence of hepatitis A varies greatly in different Brazilian regions, from 56% to 93% in Brazil. Radhakrishnan et al. (8) studied in 381 patients who were tested for agents HAV IgM in south India and detected that the prevalence of HAV as 13.3%. Junquera et al. (9) found the overall prevalence of HAV infection was 41.5% in Madrid by determining anti-HAV antibodies. Battikhi et al. (10) determined the seroepidemiology of Hepatitis A virus as 16.4% in Amman. According to Chandler et al. (4), the percent of the patients with hepatitis A was 1.11% in dental patients according to their medical history. In Turkey, previous seroepidemiologic studies showed that the frequency of this infection varies due to socio-economic differences in various regions as follows: 44.6% in Manisa (6), 43.2% in Edirne (11), 67.8% and 25.8% in Konya (12), 44.4% and 68.8 % in Duzce (13). In the present study, hepatitis A (3.2%) was the most common type compared to the other types of hepatitis. Since HAV infection is most frequently encountered in adolescents and young adults, applying the HAV vaccination in early childhood would be beneficial to decrease the prevalence of the infection and prevent HAV epidemics.

Hepatitis B virus (HBV) infection is a global health problem, with an estimated 400 million being chronic carriers of the virus (1). In Turkey, the most common transmission route of HBV was blood contact, following recent surgery, dental treatment, tooth extraction or body piercing and heterosexual transmission (14). The prevalence of HBV was determined as 1.5% in West Turkey (15). Leblebicioğlu et al. (14) stated that HBV carriage was estimated as 6% in western parts of Turkey, rising to 12.5-14.3% in eastern and southeastern Turkey according to the serologic markers. A previous self-reporting study showed that the percentage of the dental patients who were HBV carriers was 1.53% in Spain (4). According to the findings of the present study, hepatitis B carriers constituted 0.8% of the total patients. Since the disease can be asymptomatic, most people are not even aware that they have had this disease in the past. Since acute HBV infection poses a significant health problem in Turkey, dentists should be aware of the medical risk of the hepatitis B infection. The Turkish government implemented a universal HBV immunisation programme in 2000 (16), and it is hoped that routine vaccination may protect adults from acute HBV infection.

In West Turkey, the prevalence of hepatitis C virus (HCV)

infection was determined as 0.19% according to the serologic markers (15). Hepatitis C virus (HCV) infection has an estimated prevalence of 3% around the world. Unfortunately, many persons with HCV infection are asymptomatic (17). Blood transfusion is the main cause of infection (2). Previous seroepidemiologic studies showed that the prevalence of HCV in blood donors was 0.1% in Northern Europe (18), 1.47% in Mexico (19), 1.2 % in France (20) and 0.64% in Italy (21). In the present study, the frequency of the patients who had a history of hepatitis C was found as 0.1%. This finding is close to the percentages obtained in the previous studies.

It is known that patients with multiple sexual partners like male homosexuals, intravenous drug users have a high incidence of hepatitis B (2). Intravenous drug users has also accounted for a substantial portion of HCV infections (22). Sexual exposures among patients with chronic hepatitis C, may account for 10% to 20% of HCV transmissions (23). Although Battikhi et al. (10) did not found significant sex variation among the patient with hepatitis A, in the present study, a male predominance was found in terms of hepatitis B and C infection. One explanation of this result may be the fact that males are presumably more sexually active compared to females in our country due to some cultural limitations.

It is an important point that hepatitis C virus (HCV) and human immunodeficiency virus (HIV) frequently co-exist due to shared routes of transmission (24-26). The World Health Organization (WHO) has estimated that there were 30.6 million cases of HIV/AIDS (5). Coulter et al. (24) concluded that, in spite of high rate of oral disease in persons with HIV, many do not use dental care regularly. Chandler et al. (4) stated that 1.53% of the dental patients were infected by HIV. In the present study, there were no HIV-infected adults. Patients with HIV, are monitored by the infection clinics of medicine, in case they need dental treatment, they are forwarded to a dental faculty which is in the same campus. Therefore, the possibility of the referral of a patient with HIV to our faculty is very low due to independent localization.

When skin is inadvertently punctured with instruments or needles, it is important to wash the wound thoroughly. Whenever feasible, the patient's hepatitis surface antigen status should be determined. If parenteral exposure to blood that is HBsAg-positive has occurred, the dentist should receive hepatitis B immune globulin (2). Taking a thorough medical history is very important to identify patients who are potentially infectious. Because dentists are exposed to the blood and oral secretions of patients, they are particularly at risk for contacting hepatitis (2). A strict sterilization procedure is mandatory to prevent the transmission. With inadequate sterilization, the dentist and other patients can be infected with hepatitis, therefore adequate measures should definitely be taken.

REFERENCES

1. Lee WM. Hepatitis B virus infection. *N Engl J Med* 1997; 337:1733-45.
2. Sonis ST, Fazio RC, Fang L, editors. Principles and Practice of Oral Medicine. Philadelphia: WB Saunders; 1995. p. 131-45.
3. Custer B, Sullivan SD, Hazlet TK, Iloeje U, Veenstra DL, Kowdley KV. Global epidemiology of hepatitis B virus. *J Clin Gastroenterol* 2004;38:158-68.
4. Chandler-Gutierrez L, Martinez-Sahuquillo A, Bullon-Fernandez P. Evaluation of medical risk in dental practice through using the EMRRH questionnaire. *Med Oral* 2004; 9: 309-20.
5. Jainkittivong A, Aneksuk V, Langlais RP. Medical health and medication use in elderly dental patients. *J Contemp Dent Pract* 2004;5:31-41.
6. Tosun S, Ertan P, Kasirga E, Atman U. Changes in seroprevalence of hepatitis A in children and adolescents in Manisa, Turkey. *Pediatr Int* 2004;46:669-72.
7. Carrilho FJ, Mendes Clemente C, Silva LC. Epidemiology of hepatitis A and E virus infection in Brazil. *Gastroenterol Hepatol* 2005; 28: 118-25.
8. Radhakrishnan S, Raghuraman S, Abraham P, Kurian G, Chandy G, Sriharan G. Prevalence of enterically transmitted hepatitis viruses in patients attending a tertiary-care hospital in south India. *Indian J Pathol Microbiol* 2000;43 433-6.
9. Junquera S, Mateos M, Lasa E, Chacon J, Baquero F. Seroepidemiologic study of hepatitis A in the community of Madrid during the year 2002. *Enferm Infecc Microbiol Clin* 2004;22: 448-51.
10. Battikhi MN, Battikhi EG. The seroepidemiology of Hepatitis A virus in Amman, Jordan. *New Microbiol* 2004;27: 215-20.
11. Erdogan MS, Otkun M, Tatman-Otkun M, Akata F, Ture M. The epidemiology of hepatitis a virus infection in children, in Edirne, Turkey. *Eur J Epidemiol* 2004;19:267-73.
12. Atabek ME, Fyndyk D, Gulyuz A, Erkul I. Prevalence of anti-HAV and anti-HEV antibodies in Konya, Turkey. *Health Policy* 2004;67:265-9.
13. Sencan I, Sahin I, Kaya D, Oksuz S, Yildirim M. Assessment of HAV and HEV seroprevalence in children living in post-earthquake camps from Duzce, Turkey. *Eur J Epidemiol* 2004;19:461-5.
14. Leblebicioglu H, Eroglu C; Members of the Hepatitis Study Group. Acute hepatitis B virus infection in Turkey: epidemiology and genotype distribution. *Clin Microbiol Infect* 2004;10:537-41.
15. Sakarya S, Oncu S, Ozturk B, Oncu S. Effect of preventive applications on prevalence of hepatitis B virus and hepatitis C virus infections in West Turkey. *Saudi Med J* 2004;25: 1070-2.
16. Van Damme P. Hepatitis B: vaccination programmes in Europe-an update. *Vaccine* 2001;19:2375-9.
17. Mendez-Sanchez N, Ponciano-Rodriguez G, Chavez-Tapia NC, Motola-Kuba D, Almeda-Valdes P, Sanchez-Lara K, et al. Prevalence of hepatitis C infection in a population of asymptomatic people in a checkup unit in Mexico city. *Dig Dis Sci* 2005;50:733-7.
18. Diz Dios P, Lodi G, Vásquez Garcia E, Porter S. El Virus de la hepatitis C. Implicaciones en odontología. *Med Oral* 1997;2:209-18.
19. Rivera-Lopez MR, Zavala-Mendez C, Arenas-Esqueda A. Prevalence for seropositivity for HIV, hepatitis B and hepatitis C in blood donors. *Gac Med Mex* 2004;140:657-60.
20. Bellissima P, Bonfante S, Petralia A, Liardo A, Pulvirenti L, Romeo G. Prevalence of hepatitis C virus infection in different groups of selected populations. *Infez Med* 1996;4:143-5.
21. Alter MJ. The epidemiology of acute and chronic hepatitis C. *Clin Liver Dis* 1997;1:559-68.
22. Montella M, Crispo A, Grimaldi M, Angeletti C, Amore A, Ronga D, et al. Prevalence of hepatitis C virus infection in different population groups in southern Italy. *Infection* 2005; 33:103.
23. Dieterich DT, Kontorinis N, Agarwal K. HIV/HCV co infection in clinical practice. *J Int Assoc Physicians AIDS Care* 2004;31: 4-14.
24. Coulter ID, Marcus M, Freed JR, Der-Martirosian C, Cunningham WE, Andersen RM, et al. Use of dental care by HIV-infected medical patients. *J Dent Res* 2000;79: 1356-61.
25. Babudieri S, Longo B, Sarmati L, Starnini G, Dori L, Suligoi B, et al. Correlates of HIV, HBV, and HCV infections in a prison inmate population: Results from a multicentre study in Italy. *J Med Virol* 2005; 76:311-7.
26. Mendes-Correa MC, Barone AA. Hepatitis C in patients co-infected with human immunodeficiency virus. A review and experience of a Brazilian ambulatory. *Rev Inst Med Trop Sao Paulo* 2005;47:59-64.