

REVIEW ARTICLE

Hepatitis B Virus Infection in Iran: A Systematic Review

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Background and Aims: Hepatitis B virus (HBV) infection is a worldwide problem. It is estimated that 400 million people are suffering from this infection. We conducted a systematic review to put all evidence on HBV infection in I.R. Iran and to make an accurate estimate of HBV infection prevalence in Iran for further planning to control the infection.

Study Design: Meta-analysis and survey data analysis of all national and international papers, theses, congresses, reports, Iranian medical universities projects, research centers, reports of Deputy for Health affairs (published or unpublished).

Setting & Population: Iranian general population with positive HBsAg in blood samples

Selection Criteria for Studies: All descriptive/analytical cross-sectional studies/surveys from April 2001 to March 2007 that have sufficiently declared objectives, proper sampling method with identical and valid measurement instruments for all study subjects and proper analysis methods regarding sampling design and demographic adjustments

Outcomes: Presence of positive HBsAg in blood samples of study samples

Results: Fourteen studies met the inclusion criteria. They were from 7 (out of 30) provinces in which about 40 percent of the country population live. These provinces (HBsAg positive prevalence) were Golestan (6.3%), Tehran (2.2%), East Azarbaijan (1.3%), Hamedan (2.3%), Isfahan (1.3%), Kermanshah (1.3%) and Hormozgan (2.4%). The HBV infection prevalence in Iran is estimated to be 2.14 percent (95%CI: 1.92-2.35), in men and women 2.55 percent (95%CI: 2.25-2.85) and 2.03 percent (95%CI: 1.6-2.46 percent) respectively.

Conclusions: About 1.5 million people in Iran are living with HBV infection (mild to moderate prevalence according to WHO classification) and it is assumed that 15% to 40% of them are at risk of developing cirrhosis and/or hepatocellular carcinoma (HCC) without intervention. The prevalence of HBV infection has been reported higher in more recent studies compared to the study in 2000-2001.

Keywords: Hepatitis B, Iran, Systematic Review

Introduction

Hepatitis B virus (HBV) infection is a worldwide problem and between 350 and 400 million persons are estimated to suffer from this infection ⁽¹⁾. HBV infection is a contagious disease that may transmit vertically from mothers to their neonates or horizontally by means of blood products and body secretions.

The first published report about HBV infection in Iran was in 1972 ⁽²⁾. In later studies, the rate of HBV infection was reported from 1% to 2.1% in 1977 ⁽³⁾ while further reports stated higher rates (between 3.5% ⁽⁴⁾ and 2.49% ⁽⁵⁾) in both voluntary blood donors and general population ⁽⁴⁾ from 1988 to 1993. In Islamic Republic of Iran (I.R. Iran) mass

vaccination of neonates against HBV infection started from 1993 as a national program in routine neonates care. This program is supposed to affect the prevalence rate of HBV infection thorough the

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country and decrease the rate of infection after a while (6, 7). More recent studies reported the range of HBV infection between 1.2 (8) to 9.7 (9) percent in different regions of the country. Generally, it is estimated that about 1.5 to 2.5 million people are suffering from HBV infection in I.R. Iran, and some of them are carriers that may transmit infection to others unintentionally (6, 10, 11). One of the most effective programs in reducing the rate of HBV infection is decreasing carriers' pool in the community which could be achieved by vaccination programs. This, or any other effective program, needs more accurate estimates of the prevalence of HBV infection in the country (10). The changing epidemiology of HBV infection in the world and in Iran is a result of global and mass vaccination programs in high risk and susceptible groups (7).

We conducted a systematic review to put all evidence on HBV infection in I.R. Iran and to make an accurate estimate of HBV infection prevalence in Iran for further planning to control the infection. This study would also determine the endemicity status (high, intermediate or low) of HBV infection in Iran.

Methods

We studied the prevalence of HBV in Iran through a comprehensive systematic review of literature, evidences followed by Survey data analysis

and meta-analysis of findings to estimate the prevalence of HBV infection in Iranian general population.

Study question

The populations of interest was Iranian general population and the interested outcome was presence of positive HBsAg in blood samples of the study population, based on any blood tests such as enzyme-linked immuno-sorbent assay (ELISA) or even if laboratory tests are not identified clearly, from April 2001 to March 2007.

Search strategy

The search strategy was based on study question (Table 1) for electronic searches and hand searching, performed for MeSH term "Hepatitis B", "HBV" and "Iran" key words in titles and/or abstracts.

Electronic databases

We searched 12 electronic databases of biological sciences and health including Medline (Pubmed), EMBase, Scopus, ISI, CABI, CINAHL, DOAJ, Index Medicus for Eastern Mediterranean Region-IMEMR, EMROMedex, High-wire press, Cochrane library and DARE. And also three national databases of medical and life sciences literature were searched including Scientific Information Database (SID), Iranmedex and Magiran. The Iranian health sciences journals that are not indexed in electronic databases,

Table 1. Estimations of HBV infection prevalence in I.R. Iran and its provinces between 2001 and 2007.

Province	Study's First Author (Year)	Study(ies) target population	Total Sample Size(s)	Province Population	Weight*	Total; % (95%CI)	Men; % (95%CI)	Women; % (95%CI)
E.Azarbaijan	Bayat-Makou (2001), Mahabadi(2004-5), Montazam(2004)	G.P. Married people Adults&children	5320	3,603,456	677.34	1.3 (1.0-1.6)	1.7 (1.2-2.1)	0.8 (0.1-1.5)
Golestan	Pourshams(2003), Abdolahi(2004), Poorshams(2007)	G.P. G.P. G.P.	4931	1,617,087	327.94	6.3 (3.2-9.3)	7.3 (3.9-10.7)	5.4 (2.7-8.2)
Hamedan	Alizadeh(2003)	G.P.	1824	1,703,267	933.81	2.3 (1.6-3.0)	2.2 (1.3-3.2)	2.4 (1.3-3.4)
Hormozgan	Merat(2006)	G.P.	1988	1,403,674	706.07	2.4 (1.6-3.1)	3.1 (2.0-4.2)	1.8 (1.0-2.6)
Isfahan	Ataie(2006)	G.P.	816	4,559,256	5587.32	1.3 (0.5-2.1)	N.D.***	N.D.
Kermanshah	Kazerani(1999-2003)	Patients on surgery	6820	1,879,385	275.57	1.3 (1.0-1.6)	N.D.	N.D.
Tehran	Pourshams(2001), Hasanpour(2001-2), Parsania(2003-5), Merat(2007)	Students Patients on surgery Patients on surgery G.P.	7870	13,422,366	1705.51	2.2 (1.9-2.5)	2.2 (1.7-2.6)	1.9 (1.2-2.6)
National	N.A.**	N.A.	N.A.	70,495,782	N.A.	2.14 (1.9-2.35)	2.55 (2.25-2.85)	2.03 (1.6-2.46)

* Weight= Province population/Total sample size,

**N.A.: Not Applicable.

*** ND.: Not Determined. G.P.: General population

49 journals, were searched manually in search time period. So the study covered all registered and certified life sciences and medical journal in national level.

Gray literature search

Gray literature search was performed as below: There were 431 national, regional and international medical sciences congresses and seminars that were held in the study time period in Iran and we selected and hand searched 45 out of 48 relevant congresses and seminars abstract books by two independent reviewers. The research projects of 27 out of 40 universities of medical sciences in Iran were also searched from their internet web sites. We also searched national reports from Center for Diseases Control-CDC- of Iran Ministry of Health and Iran Blood Transfusion organization -IBTO-in the study time period. Medical sciences students' thesis searches were also performed by two independent reviewers from Iranian center for scientific documents and records; IranDoc. Finally, we consulted with two experts in HBV researches in Iran (Prof. Reza Malekzadeh and Prof. Seyed Moayed Alavian) and searched their personal archives for more additional citations.

Forward citation and backward citation of searched citations were performed.

Critical appraisal and selection of studies

We reviewed all citations thoroughly by two independent reviewers and checked for eligibility criteria to include the studies in the analysis. The inclusion criteria were all descriptive/analytical cross-sectional studies/surveys that have specified temporal and geographic specifications of the study, sufficiently declared objectives, proper sampling methods that could generalize findings to target population with identical and valid measurement instruments for all study subjects and proper analysis methods regarding sampling design and demographic adjustments. We revised the criteria developed by Sharifi *et al.* for this purpose⁽¹²⁾.

Data extractio

The selected and included citations were reviewed and the findings were extracted to excel spreadsheets, the extracted data were year of the study, first author, province and district of the study, sample population, sampling method, sample size, HBsAg detection method, HBsAg kit name, Age mean and standard error (SE) of subjects, percent of male subject, HBV point prevalence in study subjects and in males/females and SE. If there were other parameters reported other than SE, such as standard deviation,

confidence interval, and/or P.value, the proper modifications were performed to calculate SE.

Analysis

The extracted data were analyzed to estimate point prevalence of HBV infection and its 95% confidence interval (CI). Statistical heterogeneity of results was checked using Cochran Q-test with significance set at $P < 0.1$. We used meta-analysis method with "meta" command using fix/random model based on the results of heterogeneity test. The results were showed in geographic maps using ArcView 3.2a software (ESRI Inc. NY). We also pooled studies from each province using meta-analysis methods to estimate the prevalence of HBV in that province. We also considered survey data analysis methods to estimate more accurate HBV infection prevalence in our country. It seems that meta-analysis methods would not be suitable methods to achieve the objectives of this systematic review; because in the meta-analysis methods, weight of studies is based on their sample sizes not the population size of the provinces that those studies were from. Considering that the population of the 7 provinces that we found studies from is 28,188,491 people based on 2006 national census (about 40 percent of the country population), we used survey data analysis method to calculate nationwide prevalence estimate considering weight of each province as province population to sample size(s) ratio. The analysis was performed in STATA 9 software (STATA Corp. LP).

Results

Search result

We found 173 relevant citations out of all 2363 searched citations⁽²⁻¹⁶⁸⁾ where 62 studies were not overlapping studies (duplicate studies found by several search routes) in electronic search. In gray literature search another 191 studies were found where 85 citations out of 191 were selected^{(155, 167-214)(142, 215-250)}. No new results were produced from backward citation and forward citation of found studies.

After excluding overlapping reports to avoid double counting, overlapping samples and studies with target populations that were not representative of general population, we finally selected 24 studies with subjects in general population, out of which 4 were crossed out because they were out of the study time and 2 were deleted for methodological reasons. The detailed search processes are demonstrated in Figure 1.

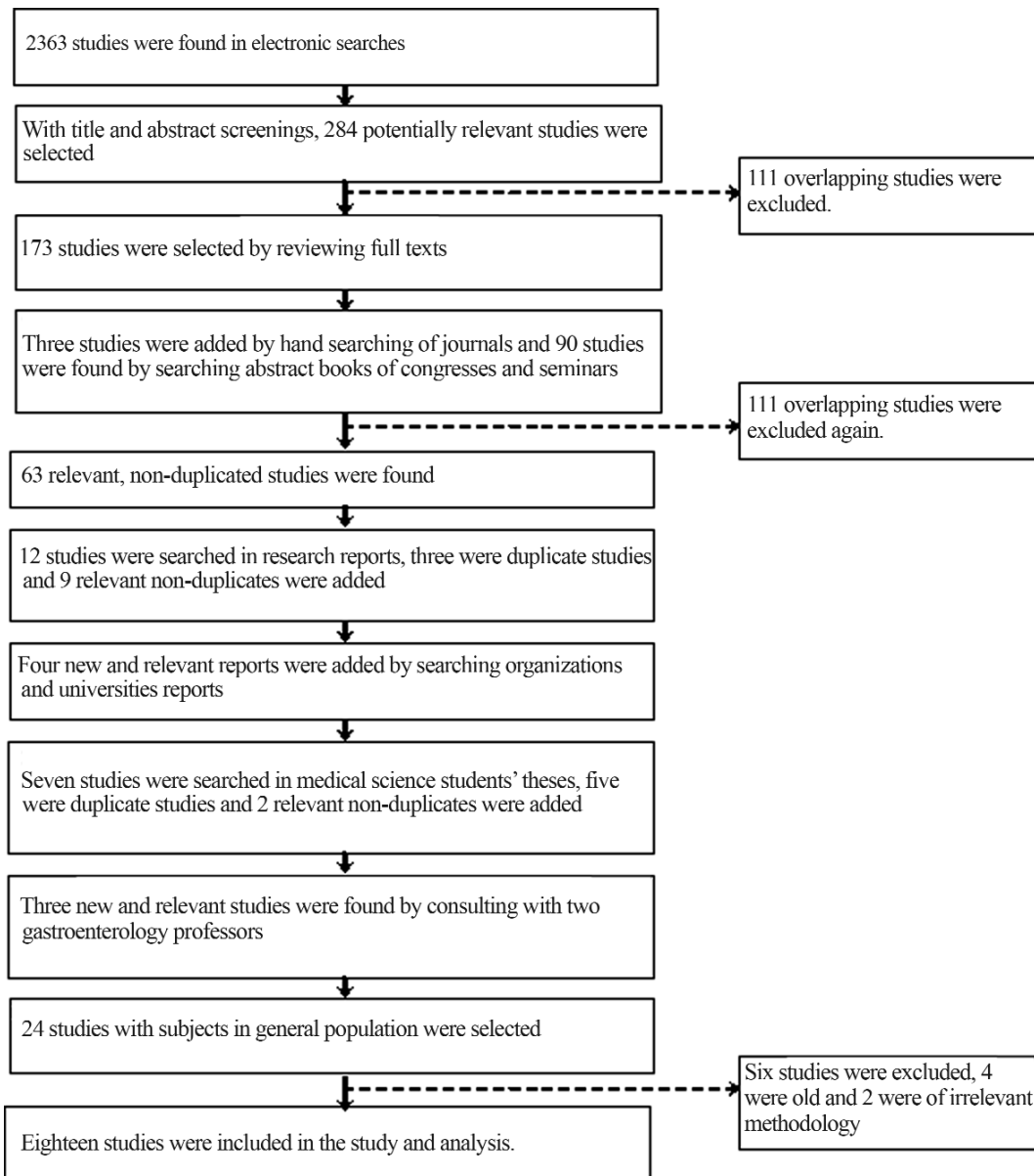


Figure 1. Follow diagram of systematic review and searches for HBV infection prevalence in I.R. Iran.

Studies

We found 18 relevant studies (8, 9, 27, 44, 67, 82, 108, 118-120, 171, 191, 202, 209, 216, 247-249) of satisfactory quality in general population. In general population, we excluded another 3 studies because they included subjects with limited age groups which may have confounded the results (44, 118, 209) and one study for low methodological quality (171). So we had 14 studies from 7 (out of 30) provinces in which about 40 percent of the country population live. four studies were from Tehran covering the years from 2001 to 2007 (67, 118, 191, 248), three from Golestan covering 2003, 2004 and 2006 (9, 119, 249), three from East Azerbaijan in 2000 and 2004 to 2005 (8,

108, 202). Other studies were from Hormozgan (2006) (247), Hamadan (2003) (27), Isfahan (2006) (216), and Kermanshah (1999-2003) (82).

All included studies were cross sectional studies conducted in Iranian population from April 2001 to March 2007 and the sample size range was between 816 and 6820. The age of the study subjects was between 6 and 93 (weighted mean 38.5 years). In the majority of the studies (13 of 15), about 34 to 56 Percent of the study subjects were males while in the other two were 85 and 93 percent. All studies had used ELISA methods that were mainly with Dade Behring, Germany and DiaSorin, Italy ELISA HBsAg detection kits.

HBV infection prevalence

The range of the reported HBV prevalence was a wide one from 1.2 percent to 9.7 percent in the general population and the studies showed heterogeneity (Test for heterogeneity: $Q=161.68$, $df=13$, $p<0.001$). According to heterogeneity test, we used random model methods for meta-analysis tests.

The meta-analysis point estimation for HBV prevalence in I.R. Iran between years 2001-2007 was 2.5 percent (95% confidence interval; CI: 2.0-3.1 percent) (Fig. 2).

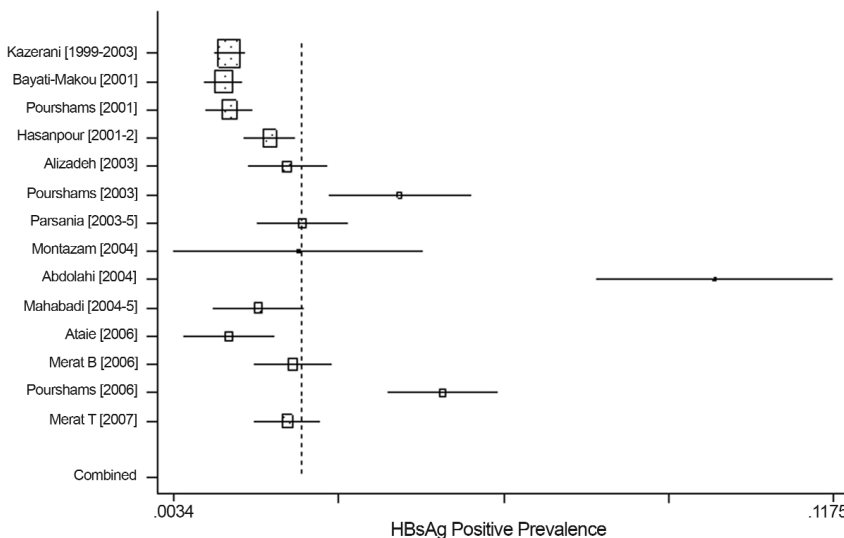


Figure 2. Forest plot of studies about HBV infection prevalence in I.R. Iran.

The distribution of HBV infection prevalence in the country showed that there were significant differences in provinces regarding HBV infection rates and the highest prevalence rate was seen in Golestan (6.3 percent; 95%CI 3.2-9.3 percent).

Using survey data analysis method, the HBV infection prevalence in I.R. Iran was estimated at 2.14 percent (95%CI: 1.92-2.35) which seems to be more accurate than meta-analysis method results as explained in the methods section. The HBV infection prevalence in Iranian men and women was estimated at 2.55 percent (95%CI 2.25-2.85) and 2.03 percent (95%CI 1.6-2.46 percent) respectively.

The geographic distribution of HBV infection in Iran showed heterogeneous patterns with the highest prevalence rates (more than 3 percent of the population infected with HBV) in northeastern region

of the country while central and western regions showed the lowest prevalence rates (between 1-2 percent infected) (Fig. 3).

Discussion

The HBV infection is a widespread disease that affects large number of populations worldwide and is considered as a major public health problem in many countries. In Iran, the mass vaccination program started in 1993 and reached 94% coverage in 2005 (7). The reported prevalence of HBV infection in Iran decreased from about 3.5% in 1990s (4, 5) to 2.14% in 2000s [current study]. This change is significant but the mass vaccination program is supposed to cause a more significant decrease in HBV infection prevalence. This can be explained by the increasing number of reports on HBV infection in Iran from 28 before 2000s to 236 after 2000. This indicates that the investigations on HBV infection in I.R. Iran have increased significantly about more than 8 times and this may result in less undetermined cases throughout the country and more attention to the infection. This also can result in obviously more accurate prevalence rates. Technology developments also provided more sensitive and accurate diagnostic tools which may explain the slower decreasing trend in HBV infection rates during the past decade despite mass

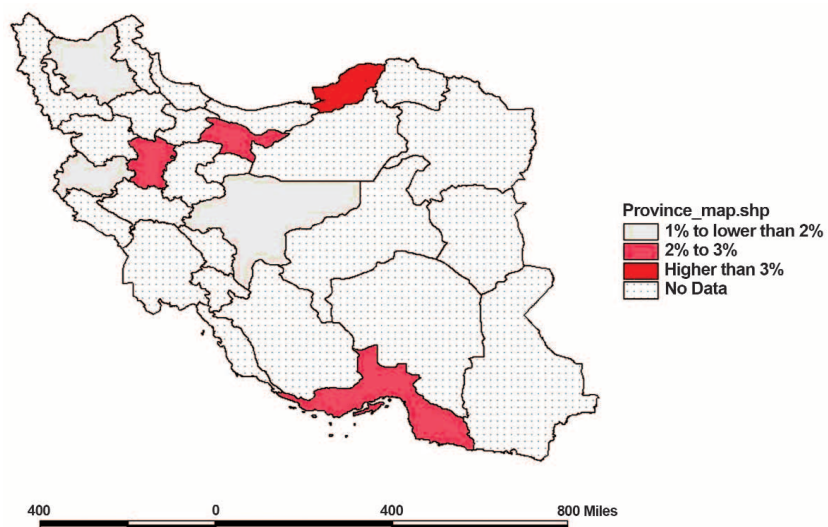


Figure 3. Geographic distribution of HBV infection in I.R. Iran.

vaccination program.

Considering that HBV prevalence reported in Tehran, East Azerbaijan, Isfahan, Hormozgan and Kermanshah in 1999-2000 overlaps with estimates of current study after 2000 we can conclude that the prevalence rate of HBV in these provinces did not change significantly in these years while in new studies the reports showed higher HBV prevalence rates⁽⁶⁾.

According to our results, it is estimated that about 1.5 million people in Iran are living with HBV infection and that 15% to 40% of them are at risk of developing cirrhosis and/or hepatocellular carcinoma (HCC) without intervention^(1, 251). It is also estimated that 225,000 to 600,000 individuals are at risk of serious health problems related to HBV infection and need immediate attention. Others are HBsAg positive carriers and this large number of carriers may disseminate infection to healthy people vertically or horizontally. Health policy makers should identify and control this large infection reservoir and plan to reduce the transmission rate via improving vaccination program efficiency. Increasing the vaccination coverage rate especially in high risk groups can be an effective plan to control the transmission rate from carriers. These groups are mainly women at their reproductive ages, young people and those with high risk activities or jobs such as health care providers, barbers, drivers and intravenous drug abusers^(71, 72, 74). It seems that there is growing evidence about vaccination in adults in Iran supported by changing of transmission routes from vertical and horizontal in childhood to horizontal in adulthood due to some risk factors⁽²⁵²⁾.

Prevalence of HBV infection in males is about 25% higher than females (2.55% vs. 2.03% respectively). This relative but not statistically significant difference can be attributable to exposure to more risk factors such as occupational risk factors in men in Iran.

Heterogeneous pattern of geographic distribution of HBV infection through the country (Fig. 3) indicates that the possible risk factor of HBV infection may differ in different regions of the country and the comprehensive community-based surveys should be conducted to investigate the predisposing factors and risk factors of the infection in these regions to promote the efficiency of interventions and prevention programs.

This study focused on studies between 2001 and 2007 to estimate a more accurate HBV infection prevalence rate that represents an actual prevalence rate at the present time and earlier reports were excluded from analysis.

The systematic reviews in Iran and this study have some limitations especially in using standard search terms in national databases that provide the majority of citations in national prevalence studies. To overcome this problem, we used all synonyms of search terms separately in both Persian and English languages. Another major limitation may be was lack of good coverage in searching universities research projects and student's thesis.

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References

1. McMahon BJ. Natural history of chronic hepatitis B - clinical implications. *Medscape J Med*. 2008;**10**(4):91.
2. Sadi S, Farrohi K, McCollum RW, Le Bouvier GL. Hepatitis-B antigen in Iran: frequency and subtype. *Lancet*. 1972;**2**(7791):1377-8.
3. Tabarestani M, Hoofnagle JH, Afkari A. Type B hepatitis in Iran. *Acta Med Iran*. 1977;**20**(3-4):105-10.
4. Farzadegan H, Shamszad M, Noori-Arya K. Epidemiology of viral hepatitis among Iranian population--a viral marker study. *Ann Acad Med Singapore*. 1980;**9**(2):144-8.
5. Amini S, Mahmoodi MF, Andalibi S, Solati AA. Seroepidemiology of hepatitis B, delta and human

- immunodeficiency virus infections in Hamadan province, Iran: a population based study. *J Trop Med Hyg.* 1993;**96**(5):277-87.
6. Zali MR, Mohammad K, Noorbala AA, Noorimayer B, Shahrzad S. Rate of hepatitis B seropositivity following mass vaccination in the Islamic Republic of Iran. *East Mediterr Health J.* 2005;**11**(1-2):62-7.
 7. Alavian SM, Fallahian F, Lankarani KB. The changing epidemiology of viral hepatitis B in Iran. *J Gastrointestin Liver Dis.* 2007;**16**(4):403-6.
 8. Bayat-Makou J, Shahnazi A, Koushavar H. [Prevalent infections in north-west region of Tabriz]. *Medical Journal of Tabriz University of Medical Sciences.* 2003;**59**(30).
 9. Abdolahi N, Keshtkar AA, Semnani S, Roshandel G R, Beshrat S, Joshaghani HR. [HBV Seroprevalence among Golestan Adults]. *Iranian Journal of Epidemiology.* 2006;**4**(1):35-40.
 10. Alavian SM. Ministry of Health in Iran Is Serious about Controlling Hepatitis B. *Hepatitis Monthly.* 2007;**7**(1):3-5.
 11. Zali MR, Mohammad K, Farhadi A, Masjedi MR, Zargar A, Nowroozi A. Epidemiology of hepatitis B in the Islamic Republic of Iran. *East Mediterr Health J.* 1996;**2**:290-8.
 12. Sharifi V, Yousefi-Nooraie R, Rahimi-Movaqar A, Mesgarpour B, Basirnia A. Development of a quality assessment tool for prevalence studies in mental health [unpublished work].
 13. Malekzadeh R, Khatibian M, Rezvan H. [Viral Hepatitis in Iran: Epidemiology, diagnosis, prevention and treatment]. *Journal of Medical Council of Islamic Republic of Iran.* 1998;**4**(15):183-202.
 14. Aali B S. The prevalence of HBsAg among pregnant women referred to Kerman maternity hospitals in 1997. *Journal of Kerman University of Medical Sciences.* 1999;**2**(6):96-89.
 15. Afzali H, Taghavi-Ardakani A, Vali G, R. [Seroepidemiology of Hepatitis B and C in blood donors in Kashan 1996-2001]. *Feyz, Kashan University of Medical Sciences & Health Services.* 2002;**23**:43-51.
 16. Aghajani-poor K, Zandieh T. [Seroepidemiological investigation of Hepatitis B, C and HIV virus in safe blood donors of Babol Blood Transfusion Center]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center.* 2005;**2**(7):339-41.
 17. Ahmadzadeh MZ. [Prevalence of HBsAg in employees of Imam Khomeini Hospital of Saghez in 1999 and 2000]. *Scientific Journal of Kourdestan University of Medical Sciences.* 2001;**5**(19):24-8.
 18. Alavian SM, Ardeshiri A, Hajarizadeh B. [Prevalence of HCV, HBV and HIV infections among Hemophiliacs]. *Hakim Research Journal.* 2003;**2**(6):45-51.
 19. Alavian SM, Einollahi B, Hajarizadeh B, Bakhtiari S, Nafar M, Ahrabi S. Prevalence of hepatitis C virus infection and related risk factors among Iranian haemodialysis patients. *Nephrology (Carlton).* 2003;**8**(5):256-60.
 20. Alavian SM, Hosseini SM, Fatahi E, Jabari A. [Frequency of hepatitis B in family members of Miltarian and non-miltarian people with positive HBsAg]. *Journal of Military Medicine.* 2004;**6**(2):99-104.
 21. Alavian SM, Kafaei J, Yektaparast B, Hajarizadeh B, Kamali A, Sadri M. [The prevalence of Hepatitis B and C among Thalassemia major patients in Qazvin]. *Kowsar Medical Journal.* 2002;**4**(7):325-19.
 22. Alavian SM, Kafayee J, Yektaparast B, Rad N, Bakhtiari S, Hajarizadeh B. [Prevalence of HCV infection and related risk factors among patients on hemodialysis in Qazvin]. *The Journal of Qazvin University of Medical Science.* 2003;**29**.
 23. Alavian SM, Malekzadeh R, Azimi K, Ghasemian-Moghadam AA, Soleymannejad H. [War injuries as risk factor for hepatitis B infection in Iranian troops]. *Journal of Military Medicine.* 2001;**1-2**(3):9-14.
 24. Alavian SM, Mostajabi P, Malekzadeh R, Azimi K, Vosough H, Sarrafi Mea. [Evaluation of Hepatitis B Transmission Risk Factors in Tehran Blood Donors]. *Govaresh* 2004;**3**(9):169-75.
 25. Alavian SM, Rajai M, Arab MS, et al. Viral Hepatitis in Iranian Armed Forces: Prevalence of HBV and HCV in the Wounded-In-Action (WIA). *Hepatitis Monthly.* 2005;**4**(5):129-31.
 26. Alizadeh AH, Ranjbar M, Ansari S, et al. Intra-familial prevalence of hepatitis B virologic markers in HBsAg positive family members in Nahavand, Iran. *World J Gastroenterol.* 2005;**11**(31):4857-60.
 27. Alizadeh AHM, Ranjbar M, Ansari S, et al. Seroprevalence of hepatitis B in Nahavand, Islamic Republic of Iran. *Eastern Mediterranean Health Journal.* 2006;**12**(5):528.
 28. Amini S, Andalibi-Mahmoodabadi S, Lamian S, Joulaie M, M. M-F. Prevalence of Hepatitis G virus (HGV) in High-Risk Groups and Blood Donors in Tehran, Iran. *Iranian Journal of Public Health.* 2005;**4**(34):41-6.
 29. Aminzadeh Z, Shabani-Shahrabaky Z, Gachkar L, Sayyadi-Anari AR. Frequency of HBsAg Positive in Pregnant Women Rafsanjan in the Year 2003. *Journal of Rafsanjan University of Medical Sciences.* 2004;**2**(3):126-33.
 30. Arab M, Abaszadeh A, Poyrabuli B, Soleimanizadeh L, Shahsavari M, Javadi M. Prevalence of HBsAg positivity in blood donors in Bam, 1999-2002. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2006;**3**(3):277-80.
 31. Asadi S, Marjani M. [Epidemiology and prevalence of infectious diseases in IVDA in Infectious Wards of Shahid Beheshti University of Medical Sciences1381-82]. *Iranian Journal of Infectious Diseases & Tropical Medicine.* 2004;**25**(9):61-5.
 32. Asefzadeh M, Sharifi M, Oliaei A. [Prevalence of HBsAg carriers and Anti-HBsAg in health care workers of Boali-Sina teaching hospital in Qazvin]. *The Journal of Qazvin University of Medical Sciences.* 2004;**32**(41-46).
 33. Ataei B, Khademi MR, Mir-Mohammad-Sadeghi A, Nokhodian Z, Kasaeian N. [Survey of Hepatitis B risk factors in blood donors at Isfahan province] *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center.* 2005;**2**(5):183-8.
 34. Attarchi Z, Ghafouri M, Hajibeigi B, Assari S, Alavian SM. [Donor deferral and blood-borne infections in blood donors of Tehran]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center.* 2005;**7**(2):353-64.
 35. Azimi K, Sarafi M, Alavian SM, Alavi S, Golestan S, Mikaeili Jea. [Frequency of liver cirrhosis etiology in the patients admitted in gastrointestinal ward of Dr Shariati hospital]. *Govaresh.* 2002;**7**(37-38):19-26.
 36. Babaei M. The comparison prevalence of HBs Ag in medical staffs with asymptomatic blood donors. *Journal of Gastroenterology and Hepatology.* 2006;**21**:A117.
 37. Babamahmoodi F. [Study of Hepatitis B and C in Razi and Hazrat Fatemeh Zahra Hospital staff of Mazandaran University of Medical Sciences in 1996]. *Journal of Mazandaran University of Medical Sciences.* 1999;**25**(9):29-5.
 38. Banitalebi-Dehkordi M, Sabet G, Banitalebi A. [Impact of natural disasters on blood safety]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2005;**7**(2):309-14.
 39. Behnaz K, Abdollah A, Fateme F, Mohammadreza R. Prevalence and risk factors of HIV, hepatitis B virus and hepatitis C virus infections in drug addicts among Gorgan prisoners. *Journal of Medical Sciences.* 2007;**7**(2):252-4.

40. Behnia H. [The incidence of viral Hepatitis B and C among dental students and health care personal at the Shahid Beheshti University School of Dentistry in 1993]. *Shahid Beheshti Medical Sciences University, Journal of the Dental School*. 1998;**32**:20-15.
41. Behzad-Behbahani A, Mojiri A, Tabei SZ, et al. Outcome of hepatitis B and C virus infection on graft function after renal transplantation. *Transplant Proc*. 2005;**37**(7):3045-7.
42. Borhanmanesh F, Behforouz N, Sanadizadeh M, Soleimani M. Hepatitis-associated antigen in patients with liver diseases and in rural population of Iran. Increased incidence in men. *Acta Hepatogastroenterol (Stuttg)*. 1979;**26**(5):358-63.
43. Bozorgi SH, Ahmadzad-Asl M, Ramezani H, Kargarfard H, Alavian SM. [Study of Viral Infections Prevalence in Blood Donors of Qazvin Province in Different Time Intervals and During Bam Earthquake]. *Govaresh*. 2006;**4**(11):242-8.
44. Chamani L, Zeraati H, Asgari S, Shabestari O, Soltangharai H, Habibzadeh-Shojai A. [Seroepidemiology evaluation for CMV, Toxoplasmosis, hepatitis B and hepatitis C in the people referring to the AVECINA Center for Infertility Treatment]. *Iranian Journal of Infectious Diseases & Tropical Medicine*. 2006;**11**(35):59-63.
45. Cohan N, Zandieh T, Samiei S, Ataie Z, Kavari M. [The prevalence and clinical significance of hepatitis B and C coinfection]. *Iranian Journal of Infectious Diseases & Tropical Medicine*. 2006;**31**(3):156-8.
46. Ebrahimpour S, Yaghoobi M, Gharamaleki V, Khoshavar H, Sakhinia E, Madadi A. Seroepidemiological studies of hepatitis B and C in hemophiles in north-western Iran. *Iran J Med Sci*. 1997;**22**:126.
47. Ebrahimpour S, Akhbari A, Madadi AJ, Naghili B, Vaez J, Rasi S. Seroepidemiological studies of Hepatitis B surface antigen in Thalassemic and hemodialysis patients in Tabriz, 1994-95 *Medical Journal of Tabriz University of Medical Sciences* 1997;**35**(31):20-13.
48. Eghbalian F, Monsef AR. Study of prevalence of post-transfusion infections in Hamadan Thalassemic children. *Scientific Journal of Hamedan University of Medical Sciences*. 2000;**17**(7):15-7.
49. Ehsani MA, Montazer-Lotfollahi H, Savadgar N. [Prevalence of hepatitis B and hepatitis C in the patients with thalassemia major in Iran]. *Iranian Journal of Pediatrics* 2002;**13**.
50. Einollahi B, Hajarizadeh B, Bakhtiari S, et al. Pretransplant hepatitis C virus infection and its effect on the post-transplant course of living renal allograft recipients. *J Gastroenterol Hepatol*. 2003;**18**(7):836-40.
51. Emam-Ghoreishi F, Fathi GA, Mohtashami A. [Evaluation of demographic characteristics and Hepatitis B, C and HIV prevalence among blood donors in Jahrom]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2005;**7**(2):373-8.
52. Eslamifard A, Hamkar R, Ramezani A, et al. Hepatitis G virus exposure in dialysis patients. *Int Urol Nephrol*. 2007;**39**(4):1257-63.
53. Eslamifard A, Hamkar R, Ramezani A, et al. Hepatitis G virus exposure in dialysis staff. *Ther Apher Dial*. 2007;**11**(5):370-4.
54. Farajzadeh S, Shakibi MR, Moghaddam SD, Rahnama Z. Behcet disease: clinical spectrum and association with hepatitis B and C viruses. *East Mediterr Health J*. 2005;**11**(1-2):68-72.
55. Farhat A, Khademi G, Mazlouman SJ. The prevalence of hepatitis B carrier state in Khorassan province of Iran. *Saudi Med J*. 2003;**24**(5):549-51.
56. Farzadegan H, Harbour C, Ala F. The prevalence of hepatitis B surface antigen and its antibody in blood donors and high risk groups in Iran. *Vox Sang*. 1979;**37**(3):182-6.
57. Farzaneh S, Reza SM, Reza SH. Molecular characteristic and epidemiology of hepatitis B, C viruses in the Shiraz Province of Iran. *Journal of Clinical Virology*. 2006;**S36**(3):36.
58. Forouzandeh B, Rezvan H, Mir-Majlessi SH, Azordegan F. [Seroepidemiologic study of Hepatitis B virus and its role in the pathogenesis of chronic liver disease and hepatocellular carcinoma in Iranian patients]. *Journal of Medical Council of Islamic Republic of Iran*. 1992;**4**(11):241-9.
59. Ghafoorian-Broujerdnia M, Assarehzadegan MA, Zandian K. Seroprevalence of Hepatitis B, Hepatitis C and human immunodeficiency virus (HIV) among Thalassemia patients refer to Ahwaz Shapha Hospital, 1999-2004. *Scientific Medical Journal*. 2006;**5**(2):528-37.
60. Ghanaat J, Sadeghian A, Ghazvini K, Nassiri MR. Prevalence and risk factors for hepatitis B virus infections among STD patients in northeast region of Iran. *Med Sci Monit*. 2003;**9**(2):CR91-4.
61. Ghavanini AA, Sabri MR. Hepatitis B surface antigen and anti-hepatitis C antibodies among blood donors in the Islamic Republic of Iran. *East Mediterr Health J*. 2000;**6**(5-6):1114-6.
62. Habibzadeh S, Davarnia B, Bazaz Ataei A, Bagherzadeh S, Hamidkholgh GR. [Epidemiological evaluation of transfusion transmitted diseases in Ardabil in Tasoua and Ashoura, 1381 (2003)]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2004;**2**(1):55-60.
63. Hadi N. Assessment of anti-HBs antigen in 6- to 9-year-old children routinely vaccinated via vaccination program in Iran. *Med Princ Pract*. 2007;**16**(4):306-9.
64. Hajiani E, Masjedizadeh R, Hashemi J, Azmi M, Rajabi T. Risk factors for hepatocellular carcinoma in Southern Iran. *Saudi Med J*. 2005;**26**(6):974-7.
65. Hamidi B, Bahadori M, Mansouri S, Nategh R. Seroepidemiologic survey of Hepatitis B markers in National Iranian Oil Company (NIOC) health workers in Tehran prior to mass vaccination. *Archives of Iranian Medicine*. 2000;**1**(3):1-5.
66. Hariri MM, Akbari N, Yavari FM, Javadi E, Javer SH. [Prevalence of Hepatitis B, C and HIV markers in Thalassemic and Hemophilic patients in Isfahan, 2004] *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2006;**2**(3):201-4.
67. Hasanpour SE, Arasteh E, Ghorbani S, Mahdavi S. [Prevalence of Hepatitis B, Hepatitis C and HIV infection in 15 year and older patients admitted in hand surgery emergency]. *Scientific Journal of Kourdestan University Of Medical Sciences*. 2003;**8**(1):25-33.
68. Hasanzadeh A, Mohammad K. [The prevalence and related risk factors of HBsAg positivity: East Azarbaijan 1996]. *Journal of Research In Medical Sciences*. 2001;**3**(6):126-7.
69. Hosseini A, SK. , Avijgan M, Mohamadnejad M. High prevalence of HBV, HCV, and HIV infections in gypsy population residing Shahr-e-Kord. *Archives of Iranian Medicine* 2004;**7**(1):20-2.
70. Imani R, Karimi A, Kasaecian N. [The relevance of related-risk behaviors and seroprevalence of HBV, HCV and HIV infection in intravenous drug users from Shahrekord, Iran, 2004]. *Shahrekord University of Medical Sciences Journal*. 2006;**1**(8):58-62.
71. Jahani MR, Alavian SM, Shirzad H, Kabir A, Hajarizadeh B. Distribution and risk factors of hepatitis B, hepatitis C, and HIV infection in a female population with "illegal social behaviour". *Sex Transm Infect*. 2005;**81**(2):185.
72. Jahani MR, Motevalian SA, Mahmoodi M. Hepatitis B carriers in large vehicle drivers of Iran. *Vaccine*.

- 2003;21(17-18):1948-51.
73. Javadi A, Poorahmad M, Atai B. [Association between numbers and duration of imprisoning and the prevalence of hepatitis B, hepatitis C and HIV infection in prisons in Iran]. *Journal of Medical Council of Islamic Republic of Iran*. 2006;24(4):358-65.
 74. Javadi AA, Avijgan M, Hafizi M. Prevalence of HBV and HCV infections and associated risk factors in addict prisoners. *Iranian Journal of Public Health*. 2006;35(4):33-6.
 75. Javadzadeh-Shahshahani H, Attar M, Yavari MT, Savabieh S. [Study of the prevalence of Hepatitis B, C and HIV infection in Hemophilia and Thalassemia population of Yazd]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2005;2(7):315-22.
 76. Kamangar E, Atapour M, Sanei-Moghadam E, Zohour AR, Nayeb-Aghaei SM. [Prevalence of serologic markers of Hepatitis B and C and risk factors among dentists and physicians in Kerman, Iran]. *Journal of Kerman University of Medical Sciences*. 2003;4(10):245-0.
 77. Karimi A. Seroprevalence of HBV, HCV and HIV among intravenous drug users in Iran. *Journal of Clinical Virology* 2006;36:S210-S1.
 78. Karimi M, Ghavanini AA. Seroprevalence of HBsAg, anti-HCV, and anti-HIV among haemophilic patients in Shiraz, Iran. *Haematologia (Budap)*. 2001;31(3):251-5.
 79. Karimi M, Ghavanini AA. Seroprevalence of hepatitis B, hepatitis C and human immunodeficiency virus antibodies among multitransfused thalassaemic children in Shiraz, Iran. *J Paediatr Child Health*. 2001;37(6):564-6.
 80. Kasraian L, Torabjaghromi SA. [Prevalence of major transfusion transmitted viral infections (HCV, HBV, HIV) in Shiraz blood donors from 2000 to 2005]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2006;5(3):373-8.
 81. Kazemi-Nejad V, Azarhoush R, Molana AA, Dehbashi GR. [Frequency of Hepatitis B virus, Hepatitis C virus and human immunodeficiency virus in blood donors and patients in Gorgan Blood Transfusion Organization in 2003]. *Scientific Journal of Gorgan University of Medical Sciences*. 2005;7(1):84-6.
 82. Kazerani H. [Epidemiologic evaluation of positive cases for HCV, HBV and HIV in the patients on surgery and aggressive cardiac interventions in Emam Ali hospital in Kermanshah]. *Scientific Journal of Kourdestan University of Medical Sciences*. 2006;11:42-7.
 83. Khamisipour GR, Tahmasebi R. [Prevalence of HIV, HBV, HCV and syphilis infection in high risk groups of Bushehr Province 1999]. *Iranian South Medical Journal*. 2000;1(3):53-9.
 84. Khani M, Vakili MM. Prevalence and risk factors of HIV, hepatitis B virus and hepatitis C virus infections in drug addicts among Zanjan prisoners. *Archives of Iranian Medicine*. 2003;6(1):1.
 85. Kheradpezhoh M, Taremi M, Gachkar L, Aghabozorgi S, Khoshbaten M. Presence and significance of transfusion-transmitted virus infection in Iranian patients on maintenance hemodialysis. *J Microbiol Immunol Infect*. 2007;40(2):106-11.
 86. Khodadadizadeh A, Esmaeili-Nadimi A, Hosseini SH, Shabani-Shahrabaki Z. [The Prevalence of HIV, HBV and HCV in Narcotic addicted Persons Referred to the out Patient Clinic of Rafsanjan University of Medical Sciences in 2003]. *Journal of Rafsanjan University of Medical Sciences*. 2006;1(5):23-30.
 87. Lalooei A. [The prevalence of HBsAg in pregnant women whose husbands received blood transfusion due to war injury]. *Kowsar Medical Journal*. 2004;9(4):303-8.
 88. Maatoghi J, Far MJ, Kiani B, Keykhaei B, Mirzaei L, Aiobzadeh N. Significant reduction of hepatitis B virus prevalence in blood donors referred to Ahwaz blood transfusion service in 2005. *Journal of Clinical Virology* 2006;36:213.
 89. Mahdaviani FS, Saremi S, Maghsoudlou M, Pourfathollah AA. [Prevalence of blood transmitted viral infections in regular and non-regular donors of Arak Blood Center]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2005;7(2):343-51.
 90. Mahmoodian-Shooshtari M, Pourfathollah A. An overview analysis of blood donation in the Islamic Republic of Iran. *Archives of Iranian Medicine*. 2006;9(3):200-3.
 91. Mahouri K, Dehghani Zahedani M, Zare S. Prevalence of markers of hepatotropic virus B and the efficacy of vaccination against hepatitis B among medical students in Bandar Abbas, Iran. *Journal of Clinical Virology*. 2006;36(2):101.
 92. Mansoori SD, Zadsar M, Arami S, P. A, Alaei K, Velayati A. [Immunological and clinical features of HIV in a group of hospitalized Iranian patients]. *Archives of Iranian Medicine* 2003;6(1):5-8.
 93. Mansour-Ghanaei F, Fallah MS, Shafaghi A, et al. Prevalence of hepatitis B and C seromarkers and abnormal liver function tests among hemophiliacs in Guilan (northern province of Iran). *Med Sci Monit*. 2002;8(12):CR797-800.
 94. Mansour-Ghanaei F, Foroutan H, Fallah MS, Shafaghi A, Pourshams A, Ramezani N. [Hepatitis viruses seromarkers and liver functions in Guilan hemophiliacs]. *Journal of Guilan University of Medical Sciences*. 2001;10(39-40):56-65.
 95. Mardani A, Hosseini S, Kheirkhahi N. [Study of confidential self-exclusion cases in Qom Regional Blood Transfusion Center]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2006;3(2):183-9.
 96. Masaeli Z, Jaberi MR, Magsoudlou M. A comparison of seroprevalence of blood-borne infections among regular, sporadic and first-time blood donors in Isfahan. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2005;2(7):301-7.
 97. Merat S, Malekzadeh R, Rezvan H, Khatibian M. Hepatitis B in Iran. *Arch Iranian Med*. 2000;3:192-201.
 98. Mirmomen S, Alavian SM, Hajarizadeh B, et al. Epidemiology of hepatitis B, hepatitis C, and human immunodeficiency virus infections in patients with beta-thalassemia in Iran: a multicenter study. *Arch Iran Med*. 2006;9:319-23.
 99. Mohamad-Alizadeh AH, Ranjbar M, Hatami S. Risk factors for HBsAg positive in blood donors in city of Hamedan. *Iranian Journal of Infectious Diseases & Tropical Medicine*. 2007;12(36):63-6.
 100. Mohammad-Alizadeh AH, Alavian SM, Jafari K, Yazdi N. [Prevalence of HBsAg, HCVAb & HIVAb in the addict prisoners of Hamadan prison, Iran, 1998]. *Journal of Research in Medical Sciences*. 2002;4(7):311-3.
 101. Mohammad-Alizadeh AH, Ranjbar M, Ansari S, Mirarab SA, Alavian SM, Mohammad K. [Virologic indices of Hepatitis B and its related risk factors in population aged 5 years and older in Nahavand in 1381]. *Pajouhandeh Quarterly Research Journal* 2003;7(8):501-6.
 102. Mohammad-Alizadeh AH, Rezazadeh M, Ranjbar M, Fallahian F, Hajilooei M, Mousavi S, M. Frequencies of Hepatitis B and C infections in Hemophiliacs of Hamedan province 2004. *Journal of Research in Medical Sciences*. 2006;30(2):119-23.
 103. Mohammad-Jaffari R, Saadati N, Vaziri-Esfarjani S, Soorani-Yan-Cheshmeh A. A survey of the frequency of HBsAg+ status in pregnant women attending health

- centers in Ahwaz Paysesh, *Journal of the Iranian Institute for Health Sciences Research*. 2004;3(3):237-47.
104. Mohammed Alizadeh AH, Fatemi SR, Mirzaee V, Khosbaten M, Talebipour B, Sharifian A. Clinical features of hepatopulmonary syndrome in cirrhotic patients. *World Journal of Gastroenterology*. 2006;12(12):1954-6.
 105. Mojibian M, Sharifi MR, Behjati-Ardakani R. [The prevalence rate of Hepatitis B surface antigen (HBsAg) carrier in pregnant women referred to prenatal care centers in Yazd]. *Journal of Shahid Sadoughi University of Medical Sciences* 2001;2(9):37-4.
 106. Moniri R, Mosayebi Z, Mossavi GA. [Seroprevalence of Cytomegalovirus, Hepatitis B, Hepatitis C and human immunodeficiency virus antibodies among volunteer blood donors]. *Iranian Journal of Public Health*. 2004;4(33):38-42.
 107. Montazam SH. Seroepidemiology of HBV and efficacy of hepatitis B vaccine in nursing and obstetrics students, Bonab City, Iran, 2004. *Journal of Clinical Virology*. 2006;36(2):102.
 108. Montazam S, Tanomand A, Khaky AA, Sany AA, Nabi MN. Seroprevalence of HBV in children and adults for estimating of national vaccine program, Malekan city, Iran 2004. *Journal of Gastroenterology and Hepatology* 2006;21:A111.
 109. Moradi A, Mohagheghi AH, Shahraki S, Borji A, Marjani A, Sanei-Moghadam E. Seroepidemiology of rubella, measles, HBV, HCV and B19 virus within women in child bearing ages (Saravan City of Sistan and Bloochastan Province). *Research Journal of Microbiology*. 2007;2(3):289-93.
 110. Mortazavi-Moghadam S, Gh R, Saadatjoo SAR. Prevalence of HBsAg-positive in patients with CRF in the beginning of hemodialysis schedule Scientific *Journal of Birjand University of Medical Sciences*. 1999;6(1-2):1-6.
 111. Nabipour I. Hepatic viruses in Iran. *Iranian South Medical Journal*. 2007;59-65(1):1.
 112. Naini MM, Derakhshan F, Hourfar H, Derakhshan R, Rajab FM. Analysis of the Related Factors in Hepatitis C Virus Infection Among Hemophilic Patients in Isfahan, Iran. *Hepatitis Monthly*. 2007;7(2):59-662.
 113. Nour-Kojory S, Alaoddowleie H, Seddighian F. Efficacy of confidential self-exclusion and failed systems on blood donation safety in Sari and Behshahr blood donors. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center* 2007;4(2):153-8.
 114. Pedram M. Frequency of hepatitis B in the children with thalassemia major refering to thalassemia clinics of Ahvaz during one year. *Scientific Medical Journal*. 2006;5(4):740-8.
 115. Pourahmad M, Javady A, Karimi I, Ataei B, Kassaeian N. Seroprevalence of and risk factors associated with hepatitis B, hepatitis C, and human immunodeficiency virus among prisoners in Iran. *Infectious Diseases in Clinical Practice*. 2007;15(6):368-72.
 116. Pourazar A, Abkbari N, Hariri M, Yavari F, Akbari S. Evaluation of demographic profiles and prevalence of major viral markers in first time vs repeat blood donors in Isfahan. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2005;2(7):323-9.
 117. Pourmand G, Salem S, Mehraei A, Taherimahmoudi M, Ebrahimi R, Pourmand MR. Infectious complications after kidney transplantation: a single-center experience. *Transpl Infect Dis*. 2007;9(4):302-9.
 118. Pourshams A, Akbari MR. [Hepatitis B in new university students of Tehran University in 1380]. *Govaresh*. 2003;8(44):126.
 119. Pourshams A, Malekzadeh R, Nasiri J. Prevalence, risk factors and intrafamilial spreading of Hepatitis B Virus in Gonbad, Iran:# 082. *Journal of Gastroenterology and Hepatology*. 2006;21:A30.
 120. Pourshams A, Nasiri J, Mohammadkhani A, Nasrollahzadeh D. [Hepatitis B in Gonbad-Kavoos: Prevalence, Risk Factors and Intrafamilial]. *Govaresh*. 2004;4(9):222-5.
 121. Rahbar AR, Rooholamini S, Khoshnood K. Prevalence of HIV infection and other blood-borne infections in incarcerated and non-incarcerated injection drug users (IDUs) in Mashhad, Iran. *International Journal of Drug Policy*. 2004;15(2):151-5.
 122. Rais-Jalali G, Khajehdehi P. Anti-HCV seropositivity among haemodialysis patients of Iranian origin. *Nephrol Dial Transplant*. 1999;14(8):2055-6.
 123. Ramezani A, Mohraz M, Gachkar L. Epidemiologic Situation of Human Immunodeficiency Virus (HIV/AIDS Patients) in a Private Clinic in Tehran, Iran. *Archives of Iranian Medicine*. 2006;9(4):315-8.
 124. Rezvan H, Abolghassemi H, Kafabad SA. Transfusion-transmitted infections among multitransfused patients in Iran: a review. *Transfus Med*. 2007;17(6):425-33.
 125. Roshandel G, Semnani S, Keshtkar A A, , Joshaghani H R, , Moradi A, Kalavi K. Seroprevalence of hepatitis B virus and its co-infection with hepatitis D virus and hepatitis C virus in Iranian adult population Indian *Journal of Medical Sciences*. 2007;61(5):263-8.
 126. Roushan MR, Mohraz M, Velayati AA. Possible transmission of hepatitis B virus between spouses and their children in Babol, Northern Iran. *Trop Doct*. 2007;37(4):245-7.
 127. Rowhani-Rahbar A, Tabatabaee-Yazdi A, Panahi M. Prevalence of Common Blood-Borne Infections among Imprisoned Injection Drug Users in Mashhad, North-East of Iran. *Archives of Iranian Medicine*. 2004;7(3):190-4.
 128. Sabayan B, Motamedifar M, Zamiri N, Karamifar K, Chohedry A. Viral infections, prevalence and costs: A 5-year, hospital based, retrospective observational study in Shiraz, Iran. *Pak J Med Sci July-September*. 2007;23(4):580-4.
 129. Saberifiroozi M, Serati AR, Malekhosseini SA, et al. Analysis of patients listed for liver transplantation in Shiraz, Iran. *Indian J Gastroenterol*. 2006;25(1):11-3.
 130. Saboori-Ghannad M, Ghasemi GR. The study of frequency of HBsAg positive cases in voluntary blood donors in Hamadan province from Feb 1995 to Jan 1996 *Scientific Journal of Hamedan University of Medical Sciences*. 1997;8(4):39-42.
 131. Saffar MJ, Farhadi R, Ajami A, Khalilian AR, Baba-Mahmoodi F, Shojaei J. [Seroepidemiology of Hepatitis E virus infection in 2-25 years old subjects, Sari, Iran]. *Journal of Mazandaran University of Medical Sciences*. 2005;50(15):75-82.
 132. Sahebamei M, Nikbin B, Razavi-Armaghanni N. [A comparison on HBs Ag and HBs Ab prevalence in patients with Down syndrome and other mentally retarded patients living in retarded children institutes in Tehran]. *Journal of Dentistry, Tehran University of Medical Sciences*. 2003;16(1):5-13.
 133. Salehi AA, Sharifi M, Norooz-Nejad M, Vazirian S. [Seroepidemiology of HIV, HBV & HCV infections in laboratory staff, Kermanshah, 2002] *Behbood*. 2003;19(7):49-54.
 134. Salehi M, Sanei-Moghaddam E, Ansari-Moghaddam AR. [HBsAg and Hepatitis C infection prevalence in prisoners of Sistan and Baloochestan province]. *Tabib-e-Shargh, Journal of Zahedan University of Medical Sciences*. 2001;3(4):203-6.

135. Sanei-Moghaddam E, Khosravi S, Gharibi T. [Prevalence of HBsAg and Anti-HCV reactivity in donors embarking on direct blood donation and among first-time blood donors in Zahedan Blood Transfusion Center]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2004;1(2):19-26.
136. Sayemiri K, Keikhavandi A. [Risk factors for hepatitis B in the blood donors in Ilam Blood Transfusion Center]. *Journal of Ilam University of Medical Sciences* 2001;9(31):19-23.
137. Semnani S, Roshandel G, Abdolahi N, et al. HBV/HCV Co-infection in Iran: A Seroprevalence Based Study. *Pakistan Journal of Biological Sciences*. 2006;9(13):2538-40.
138. Seyrafi S, Mobasherizadeh S, Javadi A, Akhzari M, Esfandiari J. Comparison and prevalence of hepatitis B and C infection and hepatitis B vaccination in hemodialysis patients and staffs in 13 hemodialysis centers in Isfahan (Iran) *Nephrology Dialysis Transplantation*. 2006;21(Suppl 4):iv 484.
139. Sharifi D, Baradaran H, Rouhani M, Zehtabchi S. [A comparison of Hepatitis B virus markers and acquired immunodeficiency syndrome (AIDS) virus in high risk medical personnel and control group] *Journal of Medical Council of Islamic Republic of Iran*. 1994;3(13):216-23.
140. Sharifi M, Asefzadeh M, Lalouha F, Alipour-Heidari M, Eshtiagh B. [Prevalence of HBsAg carriers in pregnant women in Qazvin (2000-2001)]. *The Journal of Qazvin University of Medical Sciences*. 2006;10(1):72-8.
141. Sharifi MR, Ghorraishian SM. [Epidemiology of chronic vector for Hepatitis B surface antigen in Yazd]. *Journal of Shahid Sadoughi University of Medical Sciences*. 1999;2(7):5-9.
142. Sharifi Z, Shagerdi-Esmaili N. Viral markers in blood donors which in 1382 to 1383. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
143. Sharifi-Mood B, Kaikha F, Sanei-Moghaddam S, Salehi M. Epidemiological study of hepatitis B surface antigen in pregnant women in Zahedan. *Tabib-e-Shargh, Journal of Zahedan University of Medical Sciences*. 2005;7(2):119-24.
144. Sharifi-Mood B, Sanei-Moghaddam E, Salehi M, Khosravi S. [Seroprevalence study of Hepatitis B virus infection in barbers in the Zahedan region of Iran]. *Tabib-e-Shargh, Journal of Zahedan University of Medical Sciences*. 2004;6(4):283-8.
145. Sharifi-Mood B, Khosravi S. Tattooing: A major source for viral infection. *Journal of Medical Sciences*. 2006;6(4):678-80.
146. Sharifi-Mood B, Metanat M, Ghaedi HR. [Frequency of blood born viruses transmission in the people with tattoo in Zahedan]. *Iranian Journal of Infectious Diseases & Tropical Medicine*. 2007;12(37):67-9.
147. Sharifi-Mood B, Metanat M, Sanei-Moghaddam S, Khosravi S. [Comparison of prevalence of hepatitis B virus infection in non official barbers with blood donors]. *Journal of Medical Sciences*. 2006;6(2):222-4.
148. Sharifi-Mood B, Sanei-Moghaddam S, Salehi M, Eshghi P, Khosravi S, Khalili M. [Viral infection among patients with hemophilia in the Southeast of Iran]. *Journal of Medical Sciences*. 2006;6(2):225-8.
149. Sohrabi-Sadeh A, Mokhtari-Azad T, Mahmoudi M, Tabatabai H, Sabouri N, Holakoui K. [Seroprevalence study of Hepatitis B in the laboratory personnel of Tehran]. *Iranian Journal of Public Health*. 1995;1-2(24):55-68.
150. Tabasi Z, Mir-Hosseini FS, Mousavi GA, Ghafouri L. [HBsAg in parturients referring to gynecologic clinics in Kashan, 2002]. *The Journal of Qazvin University of Medical Science*. 2003;27(7):35-41.
151. Taheri AZ, Ghanei FM, Jafarshad R, Jovkar F, Haajikariniyan K, Alinejad S. Evaluation of transfusion transmitted diseases in blood donors in Rasht, the capital city of Gilan, the north province of Iran from 2003 to 2005. *Journal of Gastroenterology and Hepatology*. 2006;21(Suppl. 2):A139-A40.
152. Talaie H, Shadnia S, Okazi A, Pajouhmand A, Hasanian H, Arianpoor H. The prevalence of hepatitis B, hepatitis C and HIV infections in non-IV drug opioid poisoned patients in Tehran-Iran. *Pakistan Journal of Biological Sciences*. 2007;10(2):220-4.
153. Taremi M, Khoshbaten M, Gachkar L, EhsaniArdakani M, Zali M. Hepatitis E virus infection in hemodialysis patients: a seroprevalence survey in Iran. *BMC Infect Dis*. 2005;5(1):36.
154. Torabi SE, Abed-Ashtiani K, Dehkhoda R, Moghadam AN, Bahram MK, Dolatkah R. [Prevalence of Hepatitis B, C and HIV in hemophilic patients of East Azarbaijan in 2004]. *Blood, Scientific Journal of Iranian Blood Transfusion Organization Research Center*. 2005;2(6):73-83.
155. Toolabi T, Malekshahi F. Prevalence of hepatitis B and C in the patients with thalassemia and hemophilia referring to thalassemia center of Shahid Madani hospital of Khorramabad in 1380. The 2nd congress of gastrointestinal and liver diseases; 2001; Tehran, Iran. 2001.
156. Vahdani P, Hosseini-Moghaddam S, Gachkar L, Sharafi K. Prevalence of hepatitis B, hepatitis C, human immunodeficiency virus, and syphilis among street children residing in southern Tehran, Iran. *Archives of Iranian Medicine*. 2006;9(2):153-5.
157. Vahid T, Alavian SM, Kabir A, Kafaei J, Yektaparast B. Hepatitis B Prevalence and Risk Factors in Blood Donors in Ghazvin, IR. Iran. *Hep Mon*. 2005;5:117-22.
158. Vahid T, Kafaei J, Kabir A, Yektaparast B, Alavian SM. Hepatitis B prevalence and risk factors in blood donors in Ghazvin, Iran. *Hakim Research Journal*. 2005;1(8):8-15.
159. Vahidi AA, Ahmadi A, Nikian Y. [Prevalence of Hepatitis B among Thalassemic patients in Kerman]. *Journal of Kerman University of Medical Sciences*. 1997;4(3):120-4.
160. Zahedi MJ, Darvish-Moghaddam S. [Frequency of Hepatitis B and C infection among Hemophilic patients in Kerman]. *Journal of Kerman University of Medical Sciences*. 2004;3(11):131-5.
161. Zahedi MJ, Darvish-Moghaddam S, Haiatbakhsh M, Ferdowsi H, Mozafarian L. [Prevalence of HBe Ag and LFT survey in HBsAg positive blood donors in Kerman]. *Journal of Kerman University Of Medical Sciences*. 2003;3(10):123-30.
162. Zahedi MJ, Zand V, Tavakoli M, Hajariazdeh B, Alavian SM. [The prevalence of hepatitis B and C among thalassemia major patients in Kerman, Iran, and the role of transfusion in infection acquisition]. *Govaresh*. 2003;8(44):72-8.
163. Zali MR, Nayer BN, Shahraz S, Sherafat R, Mohammad K, Noorbala M. Rate of HBs Ag positivity in Iran following hepatitis B mass vaccination. *Journal of Hepatology*. 2003;38:184.
164. Zandieh T, Cohan N, Samiei S, Amini S, Atee Z, Kavari M. Characteristics and prevalence of occult hepatitis B virus infection in patients with hepatitis C in Iran. *Medical Journal of the Islamic Republic of Iran*. 2005;19(2):147-51.
165. Ziad-Alizadeh B, Taheri H, Malekzadeh R, Ansari R, Khatibian M, Ebrahimi-Dariani N. [Frequency of chronic hepatitis etiology in the patients referring to a number of treatment centers in Tehran district]. *Govaresh*. 2001;3(13-14):13-23.

166. Ziaee M, Zarban A, Malekinejad P, H. A. Evaluation of HGV Viremia Prevalence and Its Co-Infection with HBV, HCV, HIV and HTLV-1 in Hemophilic Patients of Southern Khorassan, Iran. *Hepatitis Monthly* 2007;7(1):11-4.
167. Faranoush M, Ghorbani R, Amin-Bidokhti ME, Vosoogh P, Malek M, Yazdiha MS. [Prevalence of Hepatitis C resulted from blood transfusion in major Thalassemia patients in Semnan, Damghan and Garmsar, 2002]. *Journal of Hormozgan University of Medical Sciences*. 2006;1(10):77-82.
168. Shariatzadeh SMA, Nadderi GA. Study of HBV, HIV and HCV infection in major Thalassemic patients in Central province of Iran. *Medical Journal of Urmia* 2000;1(11):20-8.
169. Rahimnejad R, Sistanizadeh M, Gharebaghi N. [Frequency of HBsAg in blood donors in West Azarbaijan]. *Medical Journal of Urmia*. 2006;7(2):134-7.
170. Baharizadeh J, Peymaneh-Abedi-Mohtaseb T, Heidarzadeh Z, Estefazeh F, Dolati MA, editors. Prevalence of hepatitis B and C in hemophiliac patients in Kashan district in 1384. The 1st congress of Iranian Scientific Association of Clinical Laboratory (LAB-MED Congress); 2007; Tehran-Iran.
171. Irajian G, Ghasemi M, Amoozadeh A, Khodaiian T, editors. Prevalence of HBsAg in Semnan District. The 1st congress of Iranian Scientific Association of Clinical Laboratory (LAB-MED Congress); 2007; Tehran-Iran.
172. Saberfar E, Shokrgozar MA, Ghazi M, Bashar R. Evaluation of specific antibody against hepatitis B virus using ELISA test in under-30 people in Hormozgan province. The 1st Iranian congress on virology; 2002; Tehran-Iran. 2002.
173. Naseryan J, Babaei-Roochi G, Faghihzadeh S. Epidemiologic evaluation of hepatitis B in urban areas of Zanjan province using The 2nd annual congress of epidemiology; 2005; Zahedan, Iran. 2005.
174. Metanat M, Sharifi-Mood B, Salehi M, Alavi-Naieni R, Mokhtari S, Sanei-Mohadam E. Seroepidemiology of hepatitis B in people working in Boooli hospital in Zahedan The 2nd annual congress of epidemiology; 2005; Zahedan, Iran. 2005.
175. Vafaienejad R, Massodifar M, Gholampoor A, Peymankar A, Tasbandi R. Prevalence of HBV/HCV infection in prisoning people in Sabzevar district The 2nd annual congress of epidemiology; 2005; Zahedan, Iran. 2005.
176. Savadkoohi S, Eimani M, Akbarian MJ, editors. Prevalence of hepatitis B and C in thalassemic patients referring to Ali Asghar hospital in Zahedan in 1381 The 2nd annual congress of epidemiology; 2005; Zahedan, Iran.
177. Javadi T, Moradkhani M, editors. Prevalence of hepatitis B virus in physicians and the health care workers working in surgical rooms of the hospitals assigned to Lorestan University of Medical Sciences The 2nd congress of gastrointestinal and liver diseases 2001; Tehran-Iran.
178. Babamahmoodi H, Khalili H, editors. Prevalence of viral hepatitis B, C in hemodialysis patients in the hospitals assigned to Semnan University of Medical Sciences in 1380. The 2nd congress of gastrointestinal and liver diseases; 2001; Tehran, Iran.
179. Keshvari M, Hajarizadeh B, Alavian SM, Atarchi Z, Hajibeigi B, Kabir A. Prevalence of hepatitis B and C and associated risk factors in HIV positive patients referring to Hepatitis and AIDS Consultation Center in Tehran center if Blood Transfusion Organization (1382). The 2nd Iranian congress on virology; 2004; Tehran, Iran. 2004.
180. Emam SJ, Osarehzadegan MA, editors. Prevalence of hepatitis B, hepatitis C and HIV in valenteer blood donors in Ahvaz district. The 2nd Iranian congress on virology; 2004; Tehran, Iran.
181. Mahabadi M, Taheri M, editors. Detection of HBsAg carriers with rapid test chromatographic immunoassay and comparing to EIA. The 2nd Iranian congress on virology; 2004; Tehran, Iran.
182. Keshvari M, Alavian SM, Atarchi Z, Hajibeigi B, Kabir A, Soleimanian H. The pattern of intra-familial transmission of hepatitis B virus in the family members of blood donor hepatitis B carriers. The 2nd Iranian congress on virology; 2004; Tehran, Iran. 2004.
183. Poorkarim MR, Zandi P, Khamisipoor G, editors. Evaluation of viral hepatitis B infection markers status in Afghan population living in Dalaki in Booshehr province in 1381. The 2nd Iranian congress on virology; 2004; Tehran, Iran.
184. Khoddami E, Yahyapoor Y, Tamadoni A, Savadkoohi., Rajabnia R, Mostafazadeh A. Seroprevalence of chronic viral hepatitis B infection among adult student blood donors in Babol. The 2nd Iranian congress on virology; 2004; Tehran, Iran. 2004.
185. Azarkar Z, Sharifzadeh G, Mansoori. Prevalence of Hepatitis B and C and HIV in prisoned people in Birjand. The 3rd national epidemiology congress of Iran; 2006; Kerman, Iran. 2006.
186. Afsar-Kazerooni P, Allahyari SS, Davarpanah MA. Epidemiologic evaluation and co-infections in HIV+ and AIDS patients covered by behavioural diseases consultation center (triangular clinic) in Shiraz in 1383-84. The 3rd national epidemiology congress of Iran; 2006; Kerman, Iran. 2006.
187. Khodabakhshi B, Besharat S, Jabari A. Prevalence of HCV, HBV infection and associated factors in addict prisoning people in Gorgan district The 3rd national epidemiology congress of Iran; 2006; Kerman, Iran. 2006.
188. Montazam SH, Kafshnoochi M, Tanoomand A, editors. Seroprevalence of HIV, hepatitis B and hepatitis C among married people in Malekan district, a retrospective study from Mehr 1383 to Shahrivar 1384. The 3rd national epidemiology congress of Iran; 2006; Kerman, Iran.
189. Rostamzadeh-Khameneh Z, Yahyavi-Gharehbagh R. Prevalence of HBsAg positivity among people under hemodialysis The 3rd Iranian congress of virology; 2006; Tehran, Iran, 2006.
190. Azadegan-Ghomi H, Samak H, Forooghi S, Sahami M, Bitarafan M, Shahsavarani M, editors. Prevalence of Hepatitis B, C, HIV in patients with thalassemia major in Ghom 1383. The 3rd Iranian congress of virology; 2007; Tehran-Iran.
191. Parsania M, Poopak B, Khavari Z, Radpoor M, editors. Specify the hepatitis B carriers among 1595 patients eligible for surgery referring to Amiralmomenin hospital assigned to Islamic Azad University The 3rd Iranian congress of virology; 2006; Tehran, Iran.
192. Azadegan-Ghomi H, Samak H, Forooghi S, Sahami M, Bitarafan M. Prevalence of Hepatitis B, C, HIV in patients under dialysis in Ghom 1383. The 3rd Iranian congress of virology; 2007; Tehran-Iran. 2007.
193. Mansoor-Ghanaee F, Fallah MS, Abasi F, Salari A, Tavafzadeh R. Prevalence of Hepatitis B and C in valenteer blood donors referring to blood transfusion centers in Gilan province. The 3rd Iranian congress of virology; 2006; Tehran-Iran. 2006.
194. Mardani A, Shahsavarani M, Sahami-Zibafar M, Avarsaji-Gheshlagh Z, editors. Seroprevalence study of infection with HBV, HCV and HIV viruses in addict prisoners of Central Prison of Qom province during 1383-84. The 4th Iranian congress of virology; 2007; Tehran,

- Iran.
195. Farnoodi SH, Alavian SM, Malekzadeh R. Prevalence of HBV infection in spouses of HBsAg+ carriers in Iran. The 5th international congress of gastrointestinal and liver diseases of Iran 2005; Tehran, Iran. 2005.
 196. Zahedi MJ, Darivish-Moghadam S, Hayatbakhsh M, Malekzadeh R, Ahmadi J. Etiology of adult hepatitis in the patients referring to health care centers in Kerman within 1382-83. The 5th international congress of gastrointestinal and liver diseases of Iran 2005; Tehran, Iran. 2005.
 197. Manshoori G, Jamshidi Z. Prevalence of hepatitis B and hepatitis C virus infection in thalassemic patients referring to Emam Khomeini hospital of Ilam in the first half of 1382 The 6th congress of internal medicine; 2005; Tehran, Iran. 2005.
 198. Montazam SH, Kafshnouchi M, Mirghafoorvand M, Tanoomand A, Khaki AA, Hojati A. Seroepidemiology of hepatitis C, hepatitis B and HIV among pregnant women in Malekan province, a retrospective study in 1383. The 6th international congress on obstetrics and gynecology; 2005; Tehran, Iran. 2005.
 199. Sahaf F, Sani AA. Prevalence of hepatitis C, hepatitis B, HIV and co-infections in pregnant women. The 7th congress of obstetrics and gynecology; 2007; Tehran, Iran. 2007.
 200. Sani AA, F. S. Prevalence of serologic markers of HBV in non-vaccinated women. The 7th congress of obstetrics and gynecology; 2007; Tehran, Iran. 2007.
 201. Mansoor-Ghanaee F, Yousefi-Mashour M, Sadeghi A, Joukar F, Besharat S, Atrkar-Roshan Z. Prevalence of hepatitis C and B infection in hemodialysis patients of Rasht. The 7th Iranian congress of gastroenterology and hepatology; 2007; Tehran, Iran. 2007.
 202. Mahabadi M, Khani M. Prevalence of HBsAg among patients before cardiac surgery. The 10th Iranian congress on infectious diseases and tropical medicine; 2002; Tehran, Iran. 2002.
 203. Sharifi MR, Akbarian MJ, Abadi M. Determination of infection status for viral hepatitis B, C, HIV in thalassemic patients in Yazd province The 10th Iranian congress on infectious diseases and tropical medicine; 2002; Tehran, Iran. 2002.
 204. Sanei-Mohadam E, Khosravi S, Salehi M, Khaleghi-Moghadam M, Ghasri M, Yaghoobnejad-Moghadam Z. Evaluation of RPR, anti-HCV, anti-HIV, HbsAg in excluded blood donors with history of traditional phlebotomy (Hejamat). The 11th Iranian congress on infectious diseases and tropical medicine; 2003; Tehran, Iran. 2003.
 205. Ranjbar M, Hashemi SH, Golzardi Z, Sedigh L, Keramat F, Rezazadeh M. Frequency of intra-familial transmission of hepatitis in family members of hepatitis B and C patients referring to hepatitis clinic in Hamedan 1382 The 12th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 206. Samak H, Azadegan-Ghomi H, Jafari Z, Firoozi S, Bakhtiarinejad T, Shahsavarani M. Prevalence of hepatitis B surface antigen (HBsAg) in blood donors from 1379 to first six month of 1382 in Ghom Blood Transfusion Organization The 12th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 207. Mohsenzadeh A, Varkoobi AK. Prevalence of hepatitis B and hepatitis C in patients with thalassemia major and hemophilia in Khoramabad 1381. The 12th Iranian congress on infectious diseases and tropical medicine 2004; Tehran, Iran. 2004.
 208. Sayad B, Zarpeyma A, Janbakhsh A, Mansoori F. Seroprevalence of hepatitis B, C and HIV in personnel of Emam Khomeini center for education and health care in Kermanshah 1383. The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 209. Nosratabadi R, Sanei-Mohadam E. Prevalence of HBsAg, HBcAb and HBsAb in new students of medical majors in Islamic Azad University of Zahedan 1382. The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 210. Esteghamati A, Asgari F, Hajrasooliha HS. Trend of blood born hepatitis infections in recent 5 year. The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 211. Yadegari D, Sali S, Mohamad-Alizadeh-Bakhtoori A. Prevalence of hepatitis B and C and evaluation of liver function status and treatment of patients in Karaj district. The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 212. Sheikh BS, Mafi M. Epidemiologic evaluation of viral hepatitis in Qazvin province in 1381 and 1382 The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 213. Peyvandi S, Sayadjoo S. Prevalence of hepatitis B surface antigen (HBsAg) in blood donors referring to Semnan blood transfusion center in 1375-1380 The 13th Iranian congress on infectious diseases and tropical medicine; 2004; Tehran, Iran. 2004.
 214. Metanat M, Sharifi-Mood B, Alavi-Naieni R, Mokhtari S. Prevalence of hepatitis B in administrative units workers of Bouali hospital in Zahedan and comparing to other personnel - year 1382 The 14th Iranian congress on infectious diseases and tropical medicine; 2005; Tehran, Iran. 2005.
 215. Davarpanah MA, Darvishi M, Asadi-Pooya K, Ataie B, Mohamad-Alizadeh-Bakhtoori A. Prevalence of hepatitis B and C in HIV infected patients referring to Consultation Center for Behavioural Diseases in Shiraz in 1383 and 1384. The 14th Iranian congress on infectious diseases and tropical medicine; 2005; Tehran, Iran. 2005.
 216. Ataei B, Javadi A, Adibi P, Shoaie P. HBV markers in Esfahan province 1384. The 15th Iranian congress on infectious diseases and tropical medicine; 2006; Tehran, Iran. 2006.
 217. Peyvandi S, Sayadjoo S. Prevalence of HBV and HCV in blood donors The 15th Iranian congress on infectious diseases and tropical medicine; 2006; Tehran, Iran. 2006.
 218. Saadat A, Soleimanzadeh S, Ghoddoosi K, Ahmadzad-Asl M, Ameli J. Clinicopathologic evaluation of 15 patients with hepatocellular carcinoma (HCL) The 16th congress of association of Iranian internists; 2005; Tehran, Iran. 2005.
 219. Motaali N. Comparative evaluation of etiology and clinical and paraclinical symptoms in 220 cirrhotic patients. The 16th congress of association of Iranian internists; 2005; Tehran, Iran. 2005.
 220. Mahdaviani FS, Saremi S, Rafiea M. Prevalence of hepatitis B, C and AIDS in patients with thalassemia and hemophilia in Central province in 1383. International congress on transfusion medicine 2007; Tehran, Iran. 2007.
 221. Torabizadeh-Matooghi J, Jalalifar MA, Paridar M, Kiani B, Malekzadeh N, Komai M. Prevalence of hepatitis B and the risk factors in blood donors in Ahvaz. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 222. Bozorgi SH, Ramezani H, Alavian SM, Ahmadi M, Baghernejad A, Mostajeri A. Prevalence of blood born

- infections (hepatitis B, C and HIV) in blood donors in Qazvin province in 1384. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
223. Zabihian S, Misaghi A. Prevalence of hepatitis B, C, HIV patients with thalassemia major in Zanjan province in 1384. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 224. Maarefdoost Z, Delavari M, Ohadi AR. Association of hepatitis B, C and AIDS prevalence with knowledge improvement about protective routs against these diseases among youths blood donors in Kerman Transfusion Organization in the second half of 1382. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 225. Sheikh-Bardsiri H, Delavari M. Seroprevalence of hepatitis B and C and HIV in thalassemic patients with frequent blood transfusion in 1383 (From the unique daily care center of thalassemia in Kerman, Iran). International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 226. Zarei N, Atarchi Z, Sharifi S, Izadyar M, Kani., Farzaneh A. Prevalence of hepatitis B, C and HIV following the first blood transfusion in the children referring to Pediatrics Medical Center hospital in 1384-1385. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 227. Amini-Kafiabad S, Talebian A, Shariati M, Soleimani-Farizhandi A. Prevalence of hepatitis B virus surface antigen (HBsAg) in blood donors in 1376-1384. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 228. Zadsar M. Prevalence of hepatitis B (HBsAg+) in contiuiuos blood donors in Tehran district in 1384. International congress on transfusion medicine; 2007; Tehran, Iran. 2007.
 229. Mirmomen S. Prevalence and clinical importance of Hepatitis B in blood transfusion dependent thalassemic patients. Seminar of hepatitis and special diseases; 2002; Tehran, Iran. 2002.
 230. Sali S. Viral hepatitis B and C cases in Karaj district. . Seminar of Hepatitis, Prevention and Treatment; 2001; Tehran, Iran. 2001.
 231. Author-Not-Detemined. Frequency of hepatitis B, hepatitis and related risk factors in drivers of heavy vehicles (1386). Isfahan University of Medical Sciences; 2007; Isfahan, Iran. 2007.
 232. Author-Not-Detemined. [in persian]: Frequency of hepatitis B, C and HIV infection in adolscents imprisoned in Isfahan district in 1385. Isfahan University of Medical Sciences; 2006; Isfahan. 2006.
 233. Amoozandeh, Davvand, Davoodian, Mahoori, Hosseinpoor. Prevalence of AIDS, hepatitis B and C infection and TB in imprisoned IV drug abusers in proson of Roodan, Bandar Abbas. Bandar Abbas University of Medical Sciences; 2002; Bandar Abbas. 2002.
 234. Modaresi, Eftekharzadeh. Frequency of hepatitis B and C virus infection in patients with thalassemia major 2005; Mashhad University of Medical Sciences, Mashhad, Iran. 2005.
 235. Moosavi J, Kazemzadeh. Evaluation of the patients on maintenance hemodialysis referring to dialysis unit of Taleghani hospital in Urmia for hepatitis B 2005; Urmia University of Medical Sciences, Urmia, Iran. 2005.
 236. Salehi M, Kooshki M. Frequency of hepatitis B, C, D and cytomegalovirus in the patients on hemodialysis referring to dialysis clinic of Khatam hospital in Zahedan in 1385. 2007; Zahedan University of Medical Sciences, Zahedan, Iran. 2007.
 237. Ziaee, Sharifzadeh, Sarchahi, Azarkar. Prevalence of hepatitis B and intra familial transmission of hepatitis B in Birjand district. 2007; Birjand University of Medical Sciences, Birjand. 2007.
 238. Ziaee, Sharifzadeh., . Z, . K. Frequency of serologic markers of HIV/AIDS, hepatitis B and C in imprisoned people in Birjand district. 2007; Birjand University of Medical Sciences, Birjand, . 2007.
 239. Azarkar, Sharifzadeh. Evaluation of markers of hepatitis B markers in dialysis and thalassemic patients. 2001; Birjand University of Medical Sciences, Birjand, Iran. 2001.
 240. Esteghamati A, Hajrasooliha H. The report of blood born viral hepatitis situation in 1384 and 1385. 2007; Center for Disease Control; Deputy for Health. 2007.
 241. Bakhshi S. Frequency of hepatitis B, C and HIV dialysis unit of Shahid Beheshti hospital from Azar 1380 to Azar 1381. 2003; Zanjan University of Medical Sciences, Zanjan, Iran. 2003.
 242. Project and Program Management Department of Iranian Blood Transfusion Organization. [Statistics and status of blood transfusion and blood products in Blood Transfusion Organization in 12 months Of 1380 and comparison with 12 months Of 1379]. Iranian Blood Transfusion Organization, Tehran, Iran. 2002.
 243. Project and Program Management Department of Iranian Blood Transfusion Organization. [Statistics and status of blood transfusion and blood products in Blood Transfusion Organization in the first 10 months Of 1381 and comparison with the first 10 months Of 1380. Iranian Blood Transfusion Organization; 2003; Tehran, Iran. 2003.
 244. Project and Program Management Department of Iranian Blood Transfusion Organization. [Statistics and status of blood transfusion and blood products in Blood Transfusion Organization from Farvardin to Esfand 1383]. 2005; Iranian Blood Transfusion Organization, Tehran, Iran. 2005.
 245. Bahreini A. Frequency of hepatitis B, C and AIDS infection in patients with chronic renal failure on dialysis in Shafa center for treatment and education in 1382. 2003; Kerman University of Medical Sciences, Tehran, Iran. 2003.
 246. Razjoo F, Mohamad K, Talebian A, Yahyapoor M, Zadsar M. Geographical map of HIV, hepatitis B and C in blood donors. Research Center of Iran Blood Transfusion Organization, Tehran, Iran. 2005.
 247. Merat S, Malekzadeh R. Prevalence of HBV and HCV infection in Bandar Abbas. In press 2006.
 248. Merat S, Malekzadeh R. Prevalence of HBV and HCV infection in Tehran In press 2007.
 249. Poorshams A, Merat S, Malekzadeh R. Prevalence of HBV and HCV infection in Golestan In press 2007.
 250. Pourshams A, Merat S, Malekzadeh R. Prevalence of Viral Hepatitis in Golestan Province of Iran. In press 2006.
 251. McMahon B. Epidemiology and natural history of hepatitis B. Seminars in Liver Diseases; 2005. 2005. p. 1-3.
 252. Kabir A, Alavian SM, Ahanchi NRM. Combined passive and active immunoprophylaxis for preventing perinatal transmission of the hepatitis B virus in infants born to HBsAg positive mothers in comparison with vaccine alone. *Hepatology research*. 2006;**36**(4):265-71.