

Hepatitis C in Iran. How Extensive of a Problem Is It?

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Hepatitis B virus (HBV) used to be - and in many countries, still is - the most common cause of chronic viral hepatitis. Since the introduction of an effective vaccine against this virus, many countries have implemented neonatal HBV vaccination in their general health programs. We are beginning to observe the effects of this vaccination in most parts of the world, including Iran, where the prevalence of HBV infection is slowly declining.^{1,2} On the other hand, there is no effective vaccine against hepatitis C virus (HCV). The lack of an effective vaccine and increase in intravenous drug abuse, has led to a gradual increase in HCV infection in recent years.^{3,4} It follows that sooner or later, HCV will replace HBV as the major cause of chronic viral liver disease. Currently, in many Western countries this already is the case. In Iran the rate of HCV infection in the general population is relatively low. Estimates are around 0.5%, while the latest estimates of HBV infection are around 2.5%. Thus it would be quite a while before HCV prevalence in the general population of Iran reaches that of HBV.^{2,4} Nevertheless, in high risk populations the prevalence of HCV infection is already alarming. In a report from Sarkari et al., published in this issue of the journal,⁵ a rate of 8.6% is noted among over 2000 high-risk subjects. Other studies from Iran report rates as high as 31% in patients on chronic hemodialysis, 44.7% in thalassemia patients,⁶ 72% in hemophilia patients,⁷ and up to 80% among intravenous drug abusers in prisons.⁸ Numerous reports from Iran indicate a high prevalence of HCV infection in high-risk populations. How serious is the threat of HCV in Iran?

Unlike HBV, there is a good chance for total eradication of HCV with appropriate treatment. However this treatment is not inexpensive, nor is it well-tolerated. Genotype is one of the major factors effecting treatment and response. According to various reports from Iran, the difficult-to-treat genotypes (1 and 4) comprise about 40% – 60% of our cases which is less than reports from most Western countries.^{9,10} Another peculiarity of Iranian HCV patients is that they appear to respond better to treatment,¹¹ although this better response might be partially explained by the recently described IL28B polymorphism.¹² This is fortunate as non-responders will probably require treatment with the expensive and poorly available protease inhibitors.

It should be noted that the prevalence of HCV, as that of HBV, is not uniform throughout the country. Differences up to 6-fold have been observed. The prevalence among men is much higher than women, probably in the range of 10-fold.⁴

Another feature of HCV infection in Iran is that there is probably a less chance for chronicity. In a recent report from Iran, up to 38% of HCV infections spontaneously resolved.¹³

We need studies that will evaluate host factors in Iranian patients. It is conceivable that researchers may discover a genetic variation

similar to IL28B which predicts response to treatment or spontaneous resolution.

In Iran there is a low prevalence of HCV, a low ratio of difficult-to-treat genotypes, a high rate of spontaneous resolution, and better response to treatment. However, with the improvement of general health awareness in Iran and the high prevalence of HCV infection among high-risk groups, we will soon face a large number of HCV patients who seek treatment for which we need to be prepared.

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References

1. Merat S, Malekzadeh R, Rezvan H, Khatibian M. Hepatitis B in Iran. *Arch Iran Med.* 2000; **3**: 192 – 201.
2. Merat S, Rezvan H, Nouraei M, Jamali A, Assari S, Abolghasemi H, et al. The prevalence of hepatitis B surface antigen and anti-hepatitis B core antibody in Iran: a population-based study. *Arch Iran Med.* 2009; **12**(3): 225 – 231.
3. Rezvan H, Ahmadi J, Farhadi M, Tardyan S. A preliminary study of prevalence of HCV infection in healthy Iranian blood donors. *Vox Sang.* 1994; **67**(suppl 2): 149.
4. Merat S, Rezvan H, Nouraei M, Jafari E, Abolghasemi H, Radmand AR, et al. Seroprevalence of hepatitis C virus: the first population-based study from Iran. *Int J Infect Dis.* 2010; **14** (suppl 3): 113 – 116.
5. Sarkari B, Eilami O, Khosravani A, Sharifi A, Tabatabaee M, Fararoe M. High prevalence of hepatitis C infection among high risk groups in Kohgiluyeh and Boyer-Ahmad province, Southwest of Iran. *Arch Iran Med.* 2012; **15**(5): 271 – 274.
6. Hassanshahi G, Arababadi MK, Assar S, Hakimi H, Karimabad MN, Abedinzadeh M, et al. Post-transfusion-transmitted hepatitis C virus infection: a study on thalassemia and hemodialysis patients in south-eastern Iran. *Arch Virol.* 2011; **156**: 1111 – 1115.
7. Mosavi SA, Mansouri F, Saraei A, Sadeghei A, Merat S. [Seroprevalence of hepatitis C in hemophilia patients referring to Iran Hemophilia Society Center in Tehran]. *Govaresh.* 2011; **16**: 16 – 174.
8. Mir-Nasser MM, Mohammadkhani A, Tavakkoli H, Ansari E, Poustchi H. Incarceration is a major risk factor for blood-borne infection among intravenous drug users: Incarceration and blood borne infection among intravenous drug users. *Hepat Mon.* 2011; **11**: 19 – 22.
9. Zarkesh-Esfahani SH, Kardi MT, Edalati M. Hepatitis C virus genotype frequency in Isfahan province of Iran: a descriptive cross-sectional study. *Virol J.* 2010; **7**: 69.
10. Samimi-Rad K, Nategh R, Malekzadeh R, Norder H, Magnus L. Molecular epidemiology of hepatitis C virus in Iran as reflected by phylogenetic analysis of the NS5B region. *J Med Virol.* 2004; **74**: 246 – 252.
11. Jabbari H, Bayatian A, Sharifi AH, Zaer-Rezaee H, Fakharzadeh E, Asadi R, et al. Safety and efficacy of locally manufactured pegylated interferon in hepatitis C patients. *Arch Iran Med.* 2010; **13**(4): 306 – 312.
12. Mahboobi N, Behnava B, Alavian SM. IL28B SNP genotyping among Iranian HCV-infected patients: A preliminary report. *Hepat Mon.* 2011; **11**: 386 – 388.
13. Poustchi H, Esmaili S, Mohammadkhani A, Nikmahzar A, Pourshams A, Sepanlou SG, et al. The impact of illicit drug use on spontaneous hepatitis C clearance: experience from a large cohort population study. *PLoS One.* 2011; **6**: 23830.