



Diabetes, renal failure and hepatitis C infection: The puzzle should be attended more in future

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ARTICLE INFO

Article Type:
Editorial

Article history:
Received: 15 May 2011
Revised: 20 May 2011
Accepted: 27 May 2011

Keywords:
Diabetes Mellitus
Hepatitis C virus
Renal failure

► Implication for health policy/practice/research/medical education:

Hepatitis C and diabetes mellitus are an emerging diseases and every family physicians, internists, infectious specialists should inform about it. Understanding the importance of prevention strategies for control of burden of these diseases is necessary for policy makers.

► Please cite this paper as:

Alavian SM. Diabetes, renal failure and hepatitis C infection: The puzzle should attend more in future. *Nephro Urol Mon.* 2011;3(3):153-154.

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Metabolic syndrome is an emerging problem in the world (1). High blood glucose, abnormality in lipid profile, high blood pressure, abdominal obesity, and fatty liver are the clinical and laboratory features of the metabolic syndrome (2). patients with metabolic syndrome are at high risk of cardiovascular diseases, stroke and renal insufficiency (3). It has been reported that the prevalence of metabolic syndrome in Iran is one of the highest worldwide (4). High blood pressure and diabetes mellitus are the main causes of chronic renal failure in Iran (5). Patients on hemodialysis are at higher risk of acquiring Hepatitis C virus (HCV) infection (6-10). HCV infection is the main cause of chronic liver diseases in hemodialysis patients while HBV infection has been controlled by vaccination during recent two decades (8, 12-15). Renal transplantation will increase the risk of insulin resistance and diabetes mellitus (16, 17), on the other hand the occurrence of diabetes has negative impact on graft survival (16). So weight control and physical activity can help patients and their grafts. Diabetes mellitus has been known as one of the most

common cause of chronic renal failure and there are some reports that demonstrate a higher incidence and prevalence of type 2 diabetes mellitus in HCV-infected patients in comparison with general population (18, 19).

On the other hand, extrahepatic manifestations of HCV infection are also vital and include mixed cryoglobulinemia, lymphoproliferative disorders, and HCV-associated glomerulonephritis (MPGN) (20). HCV-associated nephropathy often develops several years after acquiring the infection. MPGN is reported as the most common HCV-induced nephropathy and usually occurs in the context of cryoglobulinemia (20). HCV and chronic renal disease are common problems worldwide that impose high health and financial burden in different countries. Diabetes mellitus, chronic renal failure, and HCV infection all of them impair quality of life and increase the morbidity and mortality in patients (21). However control of HCV and metabolic syndrome can change the scenario. Control of HCV infection in hemodialysis setting is possible (22). Integration of surveillance system for early detection, treating all of treatable patients with alpha interferon, putting HCV-infected patients on the top list for renal transplantation, training the staffs in hemodialysis centers, and using more the erythropoietin instead blood transfusion are known strategies against HCV in hemodialysis patients.

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References

1. Alavian SM, Mohammad-Alizadeh AH, Esna-Ashari F, Ardalan G, Hajarizadeh B. Non-alcoholic fatty liver disease prevalence among school-aged children and adolescents in Iran and its association with biochemical and anthropometric measures. *Liver Int.* 2009;**29**(2):159-63.
2. Daryani NE, Alavian SM, Zare A, Fereshtehnejad SM, Keramati MR, Pashaei MR, et al. Non-alcoholic steatohepatitis and influence of age and gender on histopathologic findings. *World J Gastroenterol.* 2010;**16**(33):4169-75.
3. Gharouni M, Rashidi A. Association between Fatty Liver and Coronary Artery Disease: Yet to Explore. *Hepat Mon.* 2007;**7**(4):243-4.
4. Azizi F, Salehi P, Etemadi A, Zahedi-Asl S. Prevalence of metabolic syndrome in an urban population: Tehran Lipid and Glucose Study. *Diabetes Res Clin Pract.* 2003;**61**(1):29-37.
5. Amini M, Aghighi M, Masoudkabar F, Zamyadi M, Norouzi S, Rajolani H, et al. Hemodialysis adequacy and treatment in Iranian patients: a national multicenter study. *Iran J Kidney Dis.* 2011;**5**(2):103-9.
6. Alavian SM, Tabatabaei SH, Mahboobi N. Epidemiology and risk factors of HCV infection among hemodialysis patients in countries of the Eastern Mediterranean Regional Office of WHO (EMRO): a quantitative review of literature. *J Public Health (Oxf).* 2011;**19**:191-203.
7. Alavian SM, Kabir A, Ahmadi AB, Lankarani KB, Shahbabaie MA, Ahmadzad-Asl M. Hepatitis C infection in hemodialysis patients in Iran: A systematic review. *Hemodial Int.* 2010;**14**(3):253-62.
8. Nemati E, Alavian SM, Taheri S, Moradi M, Pourfarziani V, Einollahi B. Hepatitis C Virus Infection among Patients on Hemodialysis: A Report from a Single Center in Iran. *Saudi J Kidney Dis Transpl.* 2009;**20**(1):147-53.
9. Alavian SM. A shield against a monster: Hepatitis C in hemodialysis patients. *World J Gastroenterol.* 2009;**15**(6):641-6.
10. Alavian SM, Hosseini-Moghaddam SM, Rahnavardi M. Hepatitis C among Hemodialysis Patients: A Review on Epidemiologic, Diagnostic, and Therapeutic Features. *Hepat Mon.* 2007;**7**(3):153-62.
11. Umar M, Bushra H, Ahmad M, Khurram M, Usman S, Arif M, et al. Hepatitis C in Pakistan: A Review of Available Data. *Hepat Mon.* 2010;**10**(3):205-14.
12. Alavian SM. Elevated prevalence of hepatitis B in Mexican hemodialysis patients. A multicentric survey. *Arch Med Res.* 2010;**41**(7):576; author reply 7.
13. Alavian SM. Hepatitis C in hemodialysis patients needs more attention for control and review the risk factors. *Saudi J Kidney Dis Transpl.* 2010;**21**(2):357-8; author reply 8.
14. Mahdavi-mazdeh M, Hosseini-Moghaddam SM, Alavian SM, Yahyazadeh H. Hepatitis B Infection in Hemodialysis Patients in Tehran Province, Iran. *Hepat Mon.* 2009;**9**(3):206-10.
15. Sali SH, Alavian SM, Hajarizadeh B. Effect of levamisole supplementation on hepatitis B virus vaccination response in hemodialysis patients. *Nephrology (Carlton).* 2008;**13**:376-9.
16. Sasak G, Sezer S, Colak T, Acar FN, Haberal M. Factors associated with insulin resistance after long-term renal transplantation. *Transplant Proc.* 2011;**43**(2):575-7.
17. Einollahi B, Alavian SM. Hepatitis C virus infection and kidney transplantation: a review for clinicians. *Iran J Kidney Dis.* 2010;**4**(1):1-8.
18. Alavian SM. Re: Posttransplant Diabetes Mellitus in Kidney Allograft Recipients at Shaheed Hasheminejad Hospital. *Iran J Kidney Dis.* 2008;**2**(2):110-1.
19. Alavian SM, Hajarizadeh B, Nematizadeh F, Larijani B. Prevalence and determinants of diabetes mellitus among Iranian patients with chronic liver disease. *BMC Endocr Disord.* 2004;**4**(1):4.
20. Khattab MA, Eslam M, Alavian SM. Hepatitis C Virus as a Multifaceted Disease: A Simple and Updated Approach for Extrahepatic Manifestations of Hepatitis C Virus Infection. *Hepat Mon.* 2010;**10**(4):258-69.
21. Saberi HR, Moravveji AR, Fakharian E, Kashani MM, Dehdashti AR. Prevalence of Metabolic Syndrome in bus and truck drivers in Kashan, Iran. *Diabetol Metab Syndr.* 2011;**3**(1):8.
22. Alavian SM. Hepatitis C, Chronic Renal Failure, Control Is Possible! *Hepat Mon.* 2006;**6**(2):51-2.