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Editorial

Risk of Vancomycin-Resistant Enterococci Colonization among Cancer Patients in Iran

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Editorial

Because of limited treatment options, the emergence and spread of Vancomycin-Resistant Enterococci (VRE) has become as one of the most therapeutically threat to public health [1]. Despite the low levels of virulence, VRE has been recognized an increasing cause of healthcare-associated infections [2,3]. Reported data indicted to VRE infections generating an increased cost of hospitalization in United States [4]. Regard to rate of VRE infections in Iran, some authors claimed that prevalence of VRE has risen in our hospitals [5]. However, a recent meta-analysis study estimated prevalence of VRE was 9.4 % among Iranian patients, which was comparable with results from developed countries [6].

It was shown that increasing density of gastrointestinal tract colonization by VRE is the important source for dissemination of infections among hospitalized patients [7]. Hospitalized patients with gastrointestinal colonization of VRE can be the major reservoir of the organism, sincethe most of colonized patients are asymptomatic [8]. It seems among the numerous factors which accounted for prevalence of VRE, inappropriate use of antibiotics and empiric therapies, especially vancomycin, is the main explanation in Iran [9]. There are evidences that vancomycin treatment alters intestinal microbial diversity and facilitated VRE to dominate the intestinal microbiota [2]. Meanwhile, despite the reported prevalence of VRE in Iranian dairy and animal products [10], the results are not strong enough to confirm animals to human spread of VRE.

The hospitalization, especially in the Intensive Care Units (ICUs) mentioned as a significant risk factor for acquisition of VRE [2]. Meanwhile, hospitalized patients with cancer are at an even higher risk of being colonized with VRE [11]. Infections caused by multidrug-resistant bacteriain cancer patients have been associated with high morbidity and mortality rates [12], requesting management and reducing adverse consequence of VRE infections. The crude incidence rates of cancer in Iran estimated 87.81 per 100,000 in women and 71.95 per 100,000 in men [13].

There are limited reports from Iran which specifically mentioned rate of VRE colonization among cancer patients. Nateghian, et al. of 130 stool samples yielding a VRE colonization rate of 25% in children with acute lymphoblastic leukemia from Capital of Iran (Tehran city) [14]. Kaveh, et al. of 42 patients who undergone hematopoietic stem cell transplantation, reported 33% VRE colonization, of which 12 patients had malignancy [7]. In another study by Askarian, et al. among 700 hospitalized patients a total of 99 patients (14%) were colonized with VRE and 17.2% of them were cancer patients [15]. Although, there is no data on prevalence of VRE infections among Iranian cancer patients, it seems that compared to non-cancer patients' risk of VRE colonization was higher among them. Moreover, the risk of VRE colonization among patients with malignancy diseases is comparable or even higher than patients suffering from chronic diseases. In two separate studies among Iranian hemodialysis patients, VRE colonization was detected in 6.2% and 22% of studied population [16,17]. The published data from United States showed the lower rate of VRE colonization compared to Iranian findings with 5.9% VRE colonization in leukemia patients [18]. Consequently, Zaas, et al. reported occurrence of hospital-acquired blood stream infections was 13.4% in cancer patients who colonized with VRE [19].

It seems that VRE has significant ability to colonize and cause diseases in high-risk patients. Because of multiple-drug resistance nature of VRE infections rapid identification of these isolates are essential for optimizing institutional infection control policies in order to restrict the emerging concern of these strains. The high spreading capability of VRE which was mostly related to the selective antibiotic pressures inhospital environment must be control by routine disinfection of patient area as well asscreening for VRE colonization among high risk patients in order to reduce risk of acquiring nosocomial VRE.

References

1. Pourakbari B, Mahmoudi S, Aghdam MK, Sabouni F, Eshaghi H, Alizadeh S, et al. Clonal spread of vancomycin resistance Enterococcus faecalis in an Iranian referral pediatrics center. J Prev Med Hyg. 2013; 54: 87-89.
2. Arias CA, Murray BE. The rise of the Enterococcus: beyond vancomycin resistance. Nat Rev Microbiol. 2012; 10: 266-278.
3. Heidari H, Emaneini M, Dabiri H, Jabalameli F. Virulence factors, antimicrobial resistance pattern and molecular analysis of Enterococcal strains isolated from burn patients. Microb Pathog. 2016; 90: 93-97.
4. Sydnor ER, Perl TM. Hospital epidemiology and infection control in acute-care settings. Clin Microbiol Rev. 2011; 24: 141-173.
5. Talebi M, Sadeghi J, Pourshafie MR. Molecular characterization of vancomycin-resistant *Enterococcus faecium* isolated from intensive care units. Curr Microbiol. 2014; 68: 615-620.
6. Emaneini M, Hosseinkhani F, Jabalameli F, Nasiri MJ, Dadashi M, Pouriran R, et al. Prevalence of vancomycin-resistant Enterococcus in Iran: a systematic review and meta-analysis. Eur J Clin Microbiol Infect Dis. 2016; 35: 1387-1392.
7. Kaveh M, Bazargani A, Ramzi M, Ebrahim-Saraie HS, Heidari H. Colonization rate and risk factors of vancomycin- resistant Enterococci among patients received hematopoietic stem cell transplantation in Shiraz, Southern Iran. Int J Org Transplant Med. 2016; 7: 197-205.

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8. Cetinkaya Y, Falk PS, Mayhall CG. Effect of gastrointestinal bleeding and oral medications on acquisition of vancomycin-resistant Enterococcus faecium in hospitalized patients. Clin Infect Dis. 2002; 35: 935-942.

9. Nateghian AR, Robinson J, Samadi B, Abdi N. Appropriate use of vancomycin in an educational tertiary care hospital in Tehran, Iran. Med J Islam Repub Iran. 2007; 21: 43-49.

10. Talebi M, Sadeghi J, Rahimi F, Pourshafie MR. Isolation and Biochemical Finger printing of Vancomycin-Resistant Enterococcus faecium from Meat, Chicken and Cheese. Jundishapur J Microbiol. 2015; 8: 15815.

11. Kara A, Devrim I, Bayram N, Katipoglu N, Kiran E, Oruc Y, et al. Risk of vancomycin-resistant enterococci blood stream infection among patients colonized with vancomycin-resistant enterococci. Braz J Infect Dis. 2015; 19: 58-61.

12. Cornejo-Juarez P, Vilar-Compte D, Perez-Jimenez C, Namendys-Silva SA, Sandoval-Hernandez S, Volkow-Fernandez P. The impact of hospital-acquired infections with multidrug-resistant bacteria in an oncology intensive care unit. Int J Infect Dis. 2015; 31: 31-34.

13. Amori N, Aghajani M, Asgarian FS, Jazayeri M. Epidemiology and trend of common cancers in Iran (2004-2008). Eur J Cancer Care. 2016; 26: 12449.

14. Nateghian A, Robinson JL, Arjmandi K, Vosough P, Karimi A, Behzad A, et al. Epidemiology of vancomycin-resistant enterococci in children with acute lymphoblastic leukemia at two referral centers in Tehran, Iran: a descriptive study. Int J Infect Dis. 2011; 15: 332-335.

15. Askarian M, Afkhamzadeh R, Monabbati A, Daxboeck F, Assadian O. Risk factors for rectal colonization with vancomycin-resistant enterococci in Shiraz, Iran. Int J Infect Dis. 2008; 12: 171-175.

16. Assadian O, Askarian M, Stadler M, Shaghaghian S. Prevalence of vancomycin-resistant enterococci colonization and its risk factors in chronic hemodialysis patients in Shiraz, Iran. BMC Infect Dis. 2007; 7: 52.

17. Shaghaghian S, Pourabbas B, Alborzi A, Askarian M, Mardaneh J. Vancomycin-Resistant Entrococci colonization in chronic hemodialysis patients and its risk factors in southern Iran (2005-2006). Iran Red Crescent Med J. 2012; 14: 686-691.

18. Matar MJ, Tarrand J, Raad I, Rolston KV. Colonization and infection with vancomycin-resistant Enterococcus among patients with cancer. Am J Infect Control. 2006; 34: 534-536.

19. Zaas AK, Song X, Tucker P, Perl TM. Risk factors for development of vancomycin-resistant enterococcal blood stream infection in patients with cancer who are colonized with vancomycin-resistant enterococci. Clin Infect Dis. 2002; 35: 1139-1146.

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