Hepatitis B virus infection adds lymphoma burden in Korea

Recently, Shin et al. published a study of the cancer burden in Korea attributable to infectious agents, among which hepatitis B virus (HBV) and hepatitis C virus (HCV) accounted for 29.9% of the cases and 46.5% of the deaths [1]. While they restricted the analysis to group 1 carcinogens defined by the International Agency for Research on Cancer, and cancers for which there is sufficient evidence in humans, including hepatocellular carcinoma for HBV and hepatocellular carcinoma and non-Hodgkin’s lymphoma (NHL) for HCV, they extended the analysis to cholangiocarcinoma, for which there is limited evidence. Here, we suggest that the HBV may account for additional NHL burden in Korea.

The association of HBV and NHL has been clearly shown by a large-scale cohort study [2] and a number of case–control studies in Korean population [3–5]. Our recent retrospective analysis involving 3932 NHL cases and 15 562 controls showed that HBV infection increased the risks not only of B-cell lymphomas, but also of most subtypes of T/NK-cell lymphomas, Hodgkin’s lymphoma and acute myeloid leukemia, while the association of HCV was more restricted, notably with diffuse large B-cell lymphoma, extranodal marginal zone lymphoma and peripheral T-cell lymphoma [5]. HBV-associated cases far outnumbered HCV-associated cases by a ratio of 4.3.

As noted by Shin et al., the rapidly decreasing prevalence of HBV in the young age group in recent years demonstrates the effectiveness of the nationwide vaccination program, with the prospect of decrease in HBV-associated cancers in the future. However, the incidental cases of malignant lymphoma reflect the decades of HBV carriage, and we are in for the carry-over effect of the endemic level of HBV prevalence of the past century. Therefore, it is important to bear in mind that HBV infection may be associated with a wide variety of hematologic malignancies in regions with high HBV prevalence such as Korea, and to use the prophylactic antiviral therapy during and after chemotherapy to prevent HBV reactivation.

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disclosure
The authors declare no conflicts of interest.

references

doi: 10.1093/annonc/mds156

Reply to the letter to the editor on hepatitis B virus infection adds lymphoma burden in Korea

We appreciate the valuable comments of Dr Huh on our article about the population attributable fraction (PAF) of infectious agents on cancer in Korea [1]. As Dr Huh mentioned in her letter, evidence on the etiological link between hepatitis B virus (HBV) infection and non-Hodgkin’s lymphoma (NHL) has emerged in several epidemiological studies. A meta-analysis of case–control studies suggested an odds ratio of 2.67 for detecting HBV infection in NHL cases when compared with the control population [2]. In addition, four cohort studies, including one study conducted among Korean population, have been published since 2007 and three of the reports were out after 2010 when our article was published [3–6]. Therefore, the roles of HBV in hematologic malignancy development, especially for NHL, need to be re-evaluated with more current results from these cohort studies. We conducted a meta-analysis of the four cohort studies on the HBV infection and NHL lymphoma, and found that the pooled relative risk was 1.96 [95% confidence interval (CI) 1.69–2.28] (Figure 1). The corresponding PAF for NHL was 8.02% (95% CI 5.9–10.4) for men and 6.38% (95% CI 4.7–8.3) for women in the application of the same