



# CANCERS PREVENTION ADVANCES ATTRIBUTED TO INFECTIOUS AGENTS

AVANCES EN LA PREVENCIÓN DE CÁNCERES ATRIBUIDOS A AGENTES INFECCIOSOS

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## Mr. Editor

Currently, cancers of infectious origin, represent a public health problem, especially in emergent countries. After its discovery more than 50 years ago, arduous efforts have been made to identify the agents involved, their routes of transmission and their carcinogenesis mechanisms, in order to develop effective prevention measures<sup>(1-3)</sup>.

According to statistics made by WHO in 2012, approximately 15.4% of total new cases of cancer worldwide, were attributed to infection. In Latin America, the percentage of cancers of infectious origin was 14.4%. On the other side, it was found that the percentage of cancers related to infections in underdeveloped or emergent countries, was higher (23.4%) than in developed countries (9.2%)<sup>(1)</sup>.

Until now, cancer-associated infectious agents have been reported: *Helicobacter pylori*, hepatitis B virus (HBV), hepatitis C virus (HCV), human papilloma virus (HPV; high-risk types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, and 59), Epstein – Barr virus (EBV), human herpesvirus type 8 (HHV-8 or Herpesvirus associated with Kaposi's sarcoma), lymphotropic virus human T cell type 1 (HTLV-1), acquired immunodeficiency virus (HIV) and the parasites *Opisthorchis viverrini*, *Clonorchis sinensis*, and *Schistosoma haematobium*. Of these, those responsible for the largest number of new cases worldwide are *Helicobacter pylori*, HPV, HBV and HCV<sup>(1,2)</sup>.

In that sense, it should be mentioned that over the years prevention measures, have been developed at all three levels: primary, secondary and tertiary. Regarding primary prevention, which consists of avoiding the transmission of infectious agents, there are currently public health measures to reduce the risk of infection, such as screening tests for donated blood to prevent the transmission of HHV- 8 and HTLV-1.4<sup>(4)</sup>. Likewise, the implementation of vaccination programs against HBV and HPV have significantly reduced the incidence of cellular hepatocarcinoma and cervical cancer, respectively<sup>(2,5)</sup>. However, to date there are no vaccines for HCV, *Helicobacter pylori*, EBV and HHV- 8<sup>(1)</sup>.

Similarly, secondary prevention, the purpose of which is to detect early lesions and prevent their progression, has developed screening programs such as the Pap test for the detection of HPV. Regarding tertiary prevention, whose objective is to prevent invasion and metastasis, antiangiogenic agents are currently being used against vascularized malignancies such as Cellular Hepatocarcinoma or Kaposi's Sarcoma<sup>(3,4)</sup>.

Finally, despite established prevention measures, cancers of infectious origin still represent a major cause of cancer worldwide, especially in Latin America, and this could be related to the degree of socioeconomic development in some countries. Furthermore, it is relevant that the burden of these cancers can be reduced through public health interventions such as the promotion of healthy lifestyles, control of the supply of water and food for the prevention of *H. pylori*, and the use of vaccines available (HPV, HBV)<sup>(1,2)</sup>.

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