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The possible involvement of Epstein–Barr virus in the etiology of leukemia in Sudanese patients

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Leukemia is a cancer of the blood or bone marrow characterized by an abnormal increase of blood cells, usually leukocytes. The actual cause of leukemia which is a serious cancer is still under scrutiny. The research studies the etiology of Leukemia. No single known cause for all of the different types of leukemia exists. Controversial hypotheses was proposed suggesting the role of physical as well as chemical and even biological factors as being responsible for Leukemia incidents. In recent years some convincing leads have been obtained on a causal relationship between EBV and a variety of childhood leukemia. We hypothesized that EBV could be involved in the etiology of leukemia. We describe here the results of our attempt to find a possible link between leukemia and EBV. EBV is a herpesvirus that infects and establishes a persistent infection in humans. This virus has been implicated in the development of a number of lymphoid malignancies. EBV can be considered as the prototype of oncogenic viruses that behave as direct transforming agents. EBV has been classified as a group I carcinogen. It is generally accepted that EBV is an important etiologic factor in various tumors. Virtually little was reported about the relationship between EBV genes and leukemia. The main objective of this study is to assess the incidence and the significance of EBV in patients with leukemia disorder using diagnostic parameters including cell morphology, immunologic markers, and molecular investigations. The results revealed that EBV DNA was detectable in a wide range of leukemia patients. Our findings provided evidence of the involvement of EBV in patients with leukemia. The results suggested that EBV DNA genome encoding the non-glycosylated membrane protein BNRF1 p143 was observed in a significant proportion of patients with ALL. We could not exclude a correlation between these viral infections and later leukemogenesis in childhood ALL in Sudan. Further investigations on the link between maternal EBV reactivation and the development of ALL in offspring, needs to be explored. Neither latent infection nor congenital infection can be excluded.

Biography

Haitham Eltigani Mohammed Elawad is a PhD in Microbiology working on infection control. He efficiently managed the Infection Control Committee in a 600+ bedded multi-specialty and super-specialty hospital and got good experience in various aspects of Infection Control. He has 4 original research publications in internal journals as a single author and 1 in international journal. He teaches UG, PG Medical and Nursing students in Medical Microbiology Course.

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