Letter to the Editor

Progressive multifocal leukoencephalopathy and its importance in immunocompromised patients

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To the Editor,

Progressive multifocal leukoencephalopathy (PML) is a deadly demyelinating sickness brought about by reactivation of the neurotropic human polyomavirus as titled John Cunningham virus (JCV) [1]. JCV is inactive in the urinary tract and attacks the central nervous systems of immunocompromised patients [2]. The virus can set up dormancy in B lymphocytes in the bone marrow and the fringe blood of the human host [2]. The occurrence of this sickness allegedly has expanded extraordinarily in association with serious cell immunosuppression e.g., human immunodeficiency virus (HIV) infection and immunosuppressive therapy, including natalizumab and other monoclonal antibodies, fingolimod and dimethyl fumarate [3]. Then again, without HIV disease, PML is destined to be found in hematological and strong organ malignancies, congenital immune deficiencies, autoimmune disorders, sarcoidosis and following the introduction of biological agents [4]. At present, multiple sclerosis (MS) patients who get immunomodulatory treatments have turned into the third biggest population of PML, after patients with HIV and hematological malignancies [4]. The third period of PML that is one of principle stages was started with the landing of the new immunomodulatory treatments at the turn of the 21st century, amongst which natalizumab, an alpha-4 integrin antagonist introduced in 2006 for the treatment of MS and Crohn disease, poses the highest risk [5]. Therefore, it will involve a large population in the world slowly.

The viral capsid protein 1 (VP1) of JCV, which comprises of five external circles, is the shallowest particle in the virion capsid and has the main importance in binding to the receptor on the cells. Mutations in the VP1 gene, principally in external circles, may modify the natural attributes of the infection and lead to the choice of increasingly forceful types of the infection with changed tropism and expanded obsessive potential [5]. However, this protein is an important marker in the disease molecular investigation by PCR method.

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PML is analyzed both by clinical discoveries and radiographic pictures with attractive reverberation imaging such as MRI [6]. No particular treatment is accessible, however, rebuilding of safe framework works through combination antiretroviral treatment (cART) in HIV–infected patients or withdrawal of immunosuppressive or immunomodulant medicates in those with iatrogenic immunodeficiencies may prompt ailment abatement or better survival [7].

Around one-fourth of sound patients shed JCV in pee, likely because of diligent infection replication in the urinary tract, however with no indicative or prognostic worth for PML [7]. Therefore, we can design different studies based on using cerebrospinal fluid or urine samples for detection in our country.

Conflict of interest
The authors declare that they have no conflict of interest.

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References