HTLV-1: A NEGLECTED INFECTION OF GLOBAL SIGNIFICANCE

Graham P Taylor[1, 2]

[1]Section of Virology, Department of Medicine, Imperial College London UK and [2]National Centre for Human Retrovirology, St. Mary's Hospital, Imperial College Healthcare NHS Trust, London, UK

HTLV-1 was the first human retrovirus to be discovered, in 1980. Globally 10 million persons are infected, the majority unknowingly. It is transmitted sexually, through blood products and organ transplants, through re-use of injection paraphernalia and from mother-to-child, mostly through breast-feeding. Simple prevention strategies, proven for HIV, are widely neglected for HTLV-1. Why? Data on disease associations with HTLV-1 are widely misunderstood, misused or simply missing. Adult T-cell leukaemia/lymphoma (ATL) which occurs in ~4% of all carriers is associated with a median survival of 8-10 months (in Japan) despite all the advances in chemo- and supportive therapy. Only carriers infected as infants are at risk of ATL. Recent data suggest that up to 80% of carriers are infected as adults thus 1/5 children with HTLV-1 infection develop preventable chemo-resistant malignancy albeit after ~50 years. Avoidance of breast-feeding prevents 80% of HTLV mother-to-child transmission. In Japan, the life-time risk of HTLV-1-associated myelopathy (HAM) was calculated at 0.25%. All other regions, where studied, report >10 fold higher rates. The incubation period from infection to HAM can be decades but with the exception of vertical transmission a proportion of cases of HAM start within 2 years of infection: 20% reduction in cases of HAM in Japan 2 years after introduction of blood donor screening. Transplantation of unscreened organs is unjustifiable regardless of region: 62.5% of transplantation acquired infection results in HAM.

HAM is a chronic, relentless, inflammation of the spinal cord causing pain, bladder dysfunction, constipation, impotence and progressing deterioration in gait. 50% are wheelchair dependent at 20 years. 5% progress rapidly. HTLV-1-associated uveitis is common but rarely diagnosed. Less common associations are alveolitis, bronchiectasis, polymyositis, thyroiditis and arthritis. Children develop HTLV-associated infective dermatitis. Co-infection is associated with worsened outcomes - disseminated strongyloidiasis, with a mortality rate of 90%, TB, hepatitis and HIV.

Disclosure of Interest Statement

Imperial College London is the recipient of funding for HTLV-related research from The Wellcome Trust, The Medical Research Council, the National Institute of Health Research and Bloodwise. Imperial College Healthcare NHS Trust has received HTLV clinical trial funding from Kyowa Hakko Kirin.