HIV in South and South-East Asia

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The human immunodeficiency virus type 1 (HIV-1) was unknown to medical science before 1982, when the recognition of an unusual clinical syndrome, characterised by opportunistic infections and severe immunodeficiency, precipitated a multinational effort to identify the etiological agent[1,2]. Within two years the virus was isolated in tissue culture[3]. So far two types of HIV, termed HIV-1 and HIV-2 have been detected. HIV-2 may be endemic in West Africa but is rare outside this region[4]. HIV-1 however is very common in Asia including Malaysia. The growing importance of HIV infection in Malaysia is highlighted by the two HIV-related articles in this issue.

With respect to HIV-1, it has already been estimated that by early 1997, South and South-East Asia accounted for around 5.2 million (23%) of the 22.6 million adults and children living with HIV in the world. About one third of HIV-1 infected adults in the region are females. In absolute numbers, India ranks the highest in the world with 2.5 million identified so far. Yet, in the context of the 970 million population of India, the prevalence of HIV is actually only 0.3%, a rate much lower than many other countries in the Asia-Pacific region. As for Malaysia, there are now around 18,000 HIV-1 infected cases reported thereby giving a prevalence of around 0.7%. Therefore, when examined closely, most countries in Asia and the Pacific currently appear to conform to a pattern of low prevalence. But, are HIV epidemics likely to expand abruptly in this region? Empirical evidence from Thailand, Myanmar and Cambodia shows that sudden and sharp increases in HIV incidence can and have occurred in Asia. WHO predicts that more than 40 million people will have been infected by the year 2000 and of these 42% will come from South-East Asia.

Shortly after the full genetic sequence of HIV-1 was determined, it was noted that considerable genetic diversity was present among HIV-1 isolates and for reasons not yet clear, these subtypes (also called clades) have distinct geographic distributions. HIV-1 is divided into groups O and M and under group M there are at present 9 subtypes, A-I[5]. The dissemination of HIV-1 subtypes is a natural and inevitable outcome of human travel and migration. In South East Asia the subtypes detected are B, C and E. In Malaysia, both B and E are commonly detected[6]. As for the distribution of group O it appears to remain limited in Cameroon and Gabon,with a few rare cases outside Central Africa[7].

Currently, the potential importance of HIV-1 subtypes are relevant in the development of diagnostic tests and vaccines. Since the detection of HIV-1 group O, efforts to include these antigens into the currently licenced screening tests have begun so as to ensure the safety of blood supply, as well as to accurately identify HIV-infected individuals for appropriate clinical care. As for the impact of HIV-1 subtypes in vaccine development, some manufacturers are broadening their products, which were initially derived solely from subtype B, to include non-subtype B antigens. Some have gone so far as to design vaccine field trials with vaccine products matched to the prevalent HIV-1 subtype(s).

More controversial are the data pertaining to the possible different transmissibility of the HIV-1 subtypes, thereby considerably influencing the spread of HIV-1. Several investigators have concluded that subtype E is more efficiently transmitted heterosexually than the other subtypes, particularly subtype B, because of the increased replication of this subtype in Langerhans' cells[8,9]. On the other hand, other data lend little support to this hypothesis of differential subtype transmissibility[10].

At present the methodology to determine HIV-1 subtypes is not widely available more so when there

is still little information regarding subtypes and the possible differences in clinical progression of disease and implications for therapy.

Referances

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