

immunosuppressive cytotoxic chemotherapy is likely to improve the outcome for these patients. Further clinical and basic studies should demonstrate the role of these agents in diseases such as post transplant and endemic Burkitt's lymphomas.

Epidemiology of Virus-Associated Cancers in Brazil

Rocío Hassan

Epidemiological evidences point to an increasing causative role of viruses in the multifactorial multistep etiology of human malignancies. The interactions of viruses with certain environmental and genetic factors may account for the geographic variability of incidences and clinic-biological characteristics of particular virus-associated cancers. Estimates about the preventable risks of cancer in the U.S. showed that approximately 10% of human cancers were causatively associated with viruses. In developing countries, interaction with other etiologic and risk factors besides the size of the "at risk" populations (~80% of human population), act synergically to increase the magnitude of this public health problem. In most of the cases, an accurate characterization of the problem is hampered by the lack of interdisciplinary studies in those areas. In Brazil, the main associations are HPV and cervical cancer, HTLV/II and T cell leukemia and EBV-associated neoplasms, all of them transversally influenced by the HIV epidemics. Due to the continental dimensions of the country, investigations on prevalence, viral infection patterns and association with other environmental, genetic and susceptibility factors are needed, on a regional basis, for identifying risk areas and virus-host specific interactions involved in viral associated carcinogenesis, aiming to the design of prevention and therapeutic strategies.

We studied a group of 62 children with Burkitt's lymphoma (BL) at the National Institute of Cancer, (INCa), Rio de Janeiro. Association with Epstein-Barr Virus (EBV) was found in 60% of the cases (86% of type 1), thus confirming an intermediate prevalence in the Southeast region of the country, compared to the Northeast region, where it can reach 87%. The four children diagnosed with AIDS-BL were EBV-positive. Children with EBV+BL were younger than those with EBV-BL ($p=0.002$). Aiming to identify susceptibility factors, we studied the IL-10 promoter polymorphisms SNP-1082(G/A) and STR IL10.G, as well as TNF α SNP-308(G/A). We found an excess of the highly expressing allele SNP-1082 (G) in EBV-negative patients (OR 2.82; CI 95% 1.22-6.51; $p=0.013$) pointing to a stimulatory, pro-oncogenic role of the IL-10 in this group. In 15 BL patients we investigated the expression of cellular genes by RT-PCR and found that cyclin D2 was expressed in 53% of the cases, associated to the presence of EBV ($p = 0.041$). *BCL2* was expressed in 4 of 13 cases (31%). Expression of activation induced cytidine deaminase (*AID*) gene, which is involved in physiological maturation and remodelling of immunoglobulin genes was quantified by Real-time PCR. We found a higher than expected expression of *AID* in the EBV-positive cases, not associated to the presence or degree of somatic hypermutation of *IGH* locus, which may be reflecting interactions of viral and cellular regulatory pathways. In sum, we presented results of current research in our laboratory which is helping us to understand the complex interactions between virus and host in the pathogenesis of Burkitt's lymphoma in this region.

Epidemiology of AIDS-Related Malignancies in Bahia

Eduardo M Netto, Estela Luz, Carlos Brites

Brazil reported up to June 2004 more than 362,000 individuals with AIDS (and 160,000 deaths) most of all with full blow disease, with a cumulative incidence rate of 18.4/100,000 habitants. The number of cases is rather

stable on the level of 30,000 new cases per year for the last 5 years. The number of infected women is consistently increasing throughout the epidemic as man to women ratio is down to 1.5:1 from 3.2:1 10 years ago. There is an increasing geographic spread of the cases. In lower economic regions the incidence is still increasing while decreasing in the most developed areas of Brazil. Free drug therapy is a government policy and more than 150,000 individuals are under HAART therapy. As a consequence the number of opportunistic diseases decreased enormously and patient's median survival under treatment multiplied by 4 since 1996. The main AIDS-malignancy Kaposi's sarcoma (KS), in Bahia peaked 10 years ago and it is showing a tendency to decrease slowly (from up 40 cases [Incidence: 5.6%] in 1993-1994 to 24 [Incidence: 2.4%] in 2001-02) in the same direction Brain lymphoma seems to be decreasing. On the other hand the invasive cervical cancer associated to the HIV infections seems to be increasing peaking in the last 2 years with 13 cases. Non Hodgkin's Lymphoma (NHL) presentation seems to be stable as 5-8 cases are found biannually and male and females seems to have the same incidence (8.5/1,000 patients). Differently from KS and Burkitt Lymphoma that male stands for twice the incidence. Implemented 3 years ago the databank for AIDS related malignancies at University Hospital (HUPES) has already catalogued 2150 cases of the most important malignancies related to infectious diseases mostly to AIDS. Annually more than 500 cancer cases are tested. The median age of individuals enrolled is 50 years, with the NHL patients in the upper bound of the bell shaped age distribution curve. Most of our patients come from the main reference hospital for cancer patients in the State – Hospital Aristides Maltez, seconded by the CICAN, and State Reference Outpatient Cancer Center.

Cervical Cancer and HIV: The Bahia/Brazil Situation

Conceição Queiroz

There are epidemiological evidences that persistent infection, with a high viral load of oncogenic types of human papiloma virus (HPV) plays a pivotal role in the development of uterine cervix cancer. Association of other co-factors seems to be necessary for oncogenesis, such as infection with human immunodeficiency virus (HIV). HIV related cervical intraepithelial neoplasias (CIN) show higher rates of progression and persistence, are more refractory to treatment and often recurrent than in HIV negative women. This is the reason why seropositive patients need more aggressive approach. HPV induced-lesions can be routinely diagnosed using tests such as colposcopy, cytology and histopathology. These tests do not allow identification of the viral type or its oncogenic potential, as molecular hybridization tests do. However, in Brazil, they are very restricted because they are very expensive, nevertheless, colposcopy is low cost and has high technical quality.

CIN prevalence in HIV patients in Brazil is quite variable. In São Paulo, Auge et al. (2000) found 15.2% (n=99) using colposcopy and cytology, much lower than the percentage of 72.1% (n=115) detected by Coelho et al. (2004) based on cytology only. In Rio de Janeiro, Fialho (2002) found 30% (n=130) using cytology and histopathology, similar to the 35.5% (n=354) detected by Oliveira and Silva (2003) using colposcopy and cytology. At the AIDS State Reference Center (CREAIDS), Bahia, we found 12.9% (n=833) of cytological atypia between 2002 and 2004, a much lower rate than the 37% detected between 1998 and 2000 at the same service. A possible explanation for this variation is the fact that some patients are being followed since 1998 and treated as soon as the lesion is diagnosed. Other possibility could be the very high prevalence of antiretroviral therapy.

Although there are no definitive results, some consensus about the co-infection HIV-HPV is under way: (1) The prevalence of HPV infection is higher among HIV patients than in other patient groups. Matos et al. (2003) found a prevalence of 42.9% versus 8.2% in HIV positive and negative patients, respectively and Auge et al. (2000) showed similarly 15.2% versus 3.8%. (2) There is a high rate of HPV-DNA in the cervical mucosa of