

recently, with the availability of HAART, new approaches to relapsed HIV-related NHL were tried. A prospective trial was published in 2003 on JCO. Sixteen patients with HIV-related NHL or HD were treated sequentially by salvage chemotherapy, followed by mobilization of PBSC with cyclophosphamide and conditioning with BEAM (BCNU, etoposide, Ara-C and melphalan). Ten patients received the AHSCT, with 7 complete and 2 partial remissions. Six patients maintained remission after 8 months of follow-up. (Re A, et al. J Clin Oncol 2003) A retrospective study in France in relapsed HIV-related NHL showed that, after AHSCT, 10 out of 14 patients achieved complete remission. After a median follow-up of 25 months, 5/15 patients were alive. (Gabarre J, et al. Haematologica 2004) Recently, the group from City of Hope published a trial where 20 patients with high-risk features, in relapse or refractory, with AHSCT. With a median follow-up of more than 2.5 years, 17 out of 20 were alive in remission and toxicity was low. (Krishnan A, et al. Blood 2005)

Recently trial listed above pointed to AHSCT as a valuable alternative to treat high-risk or relapsed HIV-related NHL. Its results are far superior compared to salvage chemotherapy only. Nevertheless, this results must be taken with caution. This series are relatively small and non-controlled trials. A randomized and larger clinical trial is needed.

Profiling viral gene expression in lymphomas

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One quarter of human cancers are associated with infectious agents such as viruses. Transcriptional profiling of the viral genome offers the chance to accelerate our investigations, diagnosis and staging of viral-associated lymphomas. Since viral genomes are orders of magnitude smaller than the human genome, we have developed whole viral genome arrays based upon real-time quantitative PCR for Kaposi's Sarcoma-associated herpesvirus and Epstein-Barr virus (1). This technology is technologically robust, rapid and inexpensive. Most clinical laboratories and research centers have extensive experience in real-time QPCR, which has become routine for HIV diagnostics and thus are in a position to use QPCR-based arrays for lymphoma diagnosis. In adopting real-time QPCR to comparative transcription profiling for KSHV we realized that we could feed the real-time QPCR output (the so-called CT value) directly in existing publicly available cluster analysis programs (2). In fact, the initial step in hybridization-based analysis, e.g. Affymatrix is to compute the logarithm of the signal intensity in order to improve statistical performance. The CT values already represent a logarithmic measure of the target concentration and can be used directly. PCR is the most sensitive detection method available today. It is inherently more sensitive than hybridization-based detection methods and we have been able to quantify 96 different viral mRNAs from a 2x2 mm fine-needle KS biopsy or from as little as 5000 FACS sorted cells.

EBV-Associated Lymphoma in Bahia, Brazil

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Epstein-Barr virus (EBV) is a lymphotropic virus associated with some human malignancies such as endemic Burkitt's lymphoma, Hodgkin's lymphoma (HL), AIDS-associated lymphomas. We report the frequency of EBV-infection in pediatric Burkitt's lymphoma (BL), pediatric Hodgkin's lymphoma (HL), adulthood HL and AIDS related non-Hodgkin lymphoma (NHL) occurring in Bahia, Brazil. For comparison we described also the frequency of EBV infection in 28 lymphomas not related to HIV-infection and in 40 tonsils from children living in Bahia and

40 from German children. The expression of EBV gene products was studied by *in situ* hybridization for EBER. EBV positive tumor cells were found in 87% (47/54) pediatric BL. An unexpected expression of latent membrane protein (LMP)-1 of EBV was observed in the neighborhood of *Schistosoma mansoni* granulomas and scars. The frequency of EBV infection was higher in pediatric (87%) than in adulthood HL (55%) in the same area ($p < 0,005$). The EBV-infection was related more frequently to LNH occurring in AIDS patients than in immunocompetent patients ($p=0.002$). The overall EBV infection rate in Bahian and German tonsils was similar (50 per cent of Bahian and 45 per cent of German tonsils). However, a significantly higher number of EBER-positive lymphoid cells were found in the germinal centers (GCs) of 8/20 EBV-positive tonsils from Brazil, while only 3/18 tonsils from Germany displayed a few EBER positive cells (1-9 cells/GC; mean: 0.5 cell/GC per case) in this compartment ($p < 0.007$). In addition, in two cases the EBV-infected GC cells in Bahian samples expressed an oncogenic protein, the EBV-encoded latent membrane protein (LMP)-1, findings not present in German samples. In conclusion, we shown a high frequency of EBV-associated lymphoma in pediatric and AIDS patients and therefore EBV-infection may play a major role in the lymphomagenesis in these groups. Since BL and HL are derived from GC cells, the similar rate of EBV-infection in pediatric BL and HL corroborate the hypothesis that the pattern of EBV-infection in GC may be related to the development of these lymphomas in developing areas. *This study was supported by CNPq, Brazil and Deutsche Forschungsgemeinschaft.*

Burkitt non-Hodgkin Lymphoma in Childhood

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Burkitt's Non-Hodgkin Lymphoma (B-NHL) has a high incidence at Equatorial Africa. It is endemic and associated with the Epstein-Barr Virus (EBV) infection. AIDS pandemic has increased the incidence of this neoplasia that has a close relationship with the EBV infection. In New Guinea the Burkitt's Lymphoma is highly associated with EBV and this association seems to be similar to those found in some regions of Latin America, which has similar socioeconomics and climatic conditions. An example of that is the Bahia State (and other regions of the Northeast) that shows a higher frequency of Burkitt's lymphoma associated to EBV than Southeast Brazilian states and Argentina. In the Brazilian Northeastern Region Burkitt's lymphoma seems to have an intermediate frequency between sporadic and endemic types. The high incidence of abdominal presentation of Burkitt's lymphoma (as opposed to the jaws presentation, in North of Africa) suggests common mechanisms that still need to be elucidated. The high incidence of Burkitt's lymphoma in children is similar to those found in other reports. Apparently a better immunologic control as the child grows decrease the number of EBV infected cells, target of neoplastic transformation.

The treatment in the majority of the Brazilian centers is in accordance to the Brazilian Cooperative Group for Childhood Lymphomas Treatment, protocol NHL 2000. In prognostic terms, is expected that clinical remission of 90% of low risk B cells NHL and 70% to 80% for the high risk B cells NHL. From January 2000 to September 2004, 76 NHL patients between 0 and 19 years old were evaluated. The mean age was 8,1 years (range 2-16yrs). There were 49 male and 27 female patients. 14 patients were white and 11 black 51 mixed. 39.5% of the patients came from the rural areas. 44 (57.8%) have B-NHL, 17 (22.4%) T lymphomas, 9 (11.4%) large-cells anaplastic lymphomas, 5 (6.6%) large-cells diffuse lymphomas and 1 (1.3) nasal angiocentric lymphoma. The most frequent symptoms were abdominal pain (23), followed by increased abdominal volume (14) and cervical tumors (14). Other related symptoms were abdominal tumor (7), dispnea (6), cough (3) and vomiting (3). There were other less frequent symptoms related. The most affected region was abdomen (45; 59.2%), cervical (11; 14.5%), mediastine (13; 17.1%). Others were: nose, inguinal, mallar, oropharynx, paravertebral and testicle (1