

Discoveries



Dr Liru doing an Ultra sound at Lacor Hospital

Recently, three studies have reported discoveries of genes that contribute to the development of BL, namely ID3, TCF3, and CCND3.

One of the studies used samples collected in the EMBLEM study. The discoveries represent a major advance in understanding the genetic basis of Burkitt lymphoma (BL) since *MYC*, a major cancer promoting gene called an “oncogene” was discovered.

For EMBLEM, training staff to improve collection and processing of diagnostic tissues means that tissues collected by the study can contribute to major discoveries. For the participants, a comprehensive catalogue of molecular abnormalities raises tantalizing possibilities of developing a targeted genomic treatment of a major childhood cancer in Africa. The major benefits would be simplification of treatment, fewer adverse side effects, and an increase in the cure rate of Burkitt lymphoma.

During 2013, EMBLEM will contribute more samples to gene-based studies to validate these discoveries and obtain more precise molecular mapping of endemic BL in East Africa. In addition, EMBLEM plans to start collecting fresh frozen tumor tissue. Contribution of these samples to the BL Genome Sequencing Project will enable the molecular secrets of the tumor to be unlocked and potentially open endemic BL to targeted therapy. This success will not only prove beneficial to children with endemic BL in Africa, but is likely to lead to discoveries that extend beyond BL, as did the original discoveries of EBVirus and *MYC* in BL.

Dr. Sam Mbulaiteye, Principal Investigator, EMBLEM

EMBLEM KENYA

EMBLEM Kenya has spotted 120 potential cases, of which 29 were Burkitt lymphoma. Twenty-one (16 males, 5 females) have been enrolled in the study, 5 were not eligible, and 3 died before enrollment.

The staff continue to educate the community about Burkitt lymphoma. However, the past four weeks have been challenging because nurses in public hospitals are on strike. This has made the smooth spotting, screening, and enrollment of cases more difficult. In addition, supervision of the treatment of confirmed Burkitt lymphoma cases (using cytotoxics) has been further complicated by the strike. EMBLEM staff are coordinating with emergency staff to maintain minimum spotting and screening service.

EMBLEM TANZANIA

EMBLEM Tanzania has spotted 199 potential cases, of which 70 were Burkitt lymphoma. Of these, 27 were from outside the study region, 19 had initiated treatment before being referred to EMBLEM, 1 was clinically unstable, and 23 (12 males and 11 females) have been enrolled.

The EMBLEM clinic at Shirati obtained a backup generator. With this development, the EMBLEM laboratory at Shirati has attained a major milestone of becoming functionally equipped to collect, process, and store samples on-site as specified in the EMBLEM protocol. More posters about Burkitt lymphoma were printed and will be distributed to health facilities and villages as part of community mobilization.



Generator and housing at Shirati EMBLEM

EMBLEM UGANDA

EMBLEM Uganda has spotted 269 potential cases of which 239 were Burkitt lymphoma. Of these, 58 were from outside the study region, 34 had initiated treatment and 12 were clinically unstable. Of the 135 eligible cases, 124 have been enrolled. With respect to controls, control enrollment has been completed in six of the twelve pilot villages for a total 672 controls.

EMBLEM Uganda facilitated the training of Dr. Liru Meshack, a pediatrician working with the EMBLEM at Homabay in Kenya, on December 5-19, 2012. The training included performing ultrasound-guided tru-cut biopsies, touch preparations staining and other EMBLEM fieldwork procedures. Dr. Liru also learned about procedures for fresh frozen tissue collection, which will soon be introduced in Kenya.

Dr Martin Ogwang, Co-PI Emblem Uganda, and Dr. Liru participated in a Burkitt lymphoma orientation training for clinicians in Arua District in Uganda. Seventeen participants attended from various health centers and hospitals. The investigators took this opportunity to visit hospitals in West Nile region and to distribute posters and newsletters. Based on the feedback, EMBLEM staff will prepare educational materials about Burkitt lymphoma for doctors in the region.

EMBLEM Study Goals

Review of historical case data and accuracy of clinical diagnosis revealed a historical average of 24 cases per month and also that the accuracy of clinical diagnosis was not optimal. Lack of biopsy or properly stored fine needle aspiration (FNA) slides for cytology precluded review of cases to confirm diagnosis later. To strengthen tissue collection for diagnosis and pathology study (see editorial), EMBLEM has trained 2 pediatricians at Bugando (Tanzania) and Homa Bay (Kenya) to use ultrasound, along with larger bore needles, to obtain samples from deep-seated tumors. **Average case accrual is 3.2 cases per month; the goal is 8 cases per month.** Case sensitization is being performed to strengthen case spotting, referral, screening, and enrollment.

BABY: Mr. **David** (Laboratory technician) and **Sisco Chemushak** were blessed with a baby girl (9 Jan 2013).

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