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The Paradigm of Multidisciplinarity in Neurosciences

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Multidisciplinarity in the field of medicine is an obviousness. Human beings are entities whose biological systems function not in isolation but in sync to maintain their integrity. They are interdependent and are linked by an interactive and permanent communication. The complexity of all the systems which ensures this biological harmony requires a high degree of specialization of the numerous actors who fight to preserve life. The exchanges and the sharing of knowledge - the guaranteeing of scientific discoveries and innovations should associate competences from all scientific communities of the whole world. This without hierarchy-Indeed, each other's contribution is complementary and supplementary.

This can be exemplified by Burkitt's lymphoma (BL) which has witnessed an extraordinary oncologic progress likewise in its epidemiology, virology and immunology, oncological treatment.

BL is the first cause of pediatric spinal cord compression in sub-Saharan Africa (1) It involves approximately 1 to 2% of all the cases of lymphoma and 35 to 50% of the non-Hodgkin lymphoma of the child (2). The disease is twice as common in boys as in girls. The endemic form - which coexists with a sporadic form and related to the HIV - corresponds to areas of holoendemic malaria (3) and the early acquisition of EBV. It develops in the lower maxilla but also in the other bones of the face or the abdomen. The neurological features are observed in 1/4 of the cases : meningeal syndromes (biological and/or clinic), paralysis of the cranial nerves, paraplegias,... (2) Thanks to the contribution of various researchers and doctors, it can be cured in almost 90% of the cases (2).

The story of the BL began in the heart of Africa. In 1957, Denis Parsons Burkitt (1911-1993), an Irish surgeon - having lost an eye at the age of 11 years - and practicing in Uganda had observed a high number of tumors of the jaw in children of this area (4). He suggested it was a sarcoma. A few years later, the diagnosis of lymphoma was set after clinical descriptions in Zaire (today DRC). A viral cause is suspected in 1964 by Epstein, Barr and Achong who identified the presence of viral particles in the tumors issues (5) Serology testified the coexistence of a former infection by the virus of Epstein Barr (EBV). Genome EBV was then identified in tumoral cell in 98% of the cases of the endemic BL with a chromosomal translocation. BL was one of the first tumors shown to have a chromosomal translocation that activates an oncogene (c-MYC) (1, 5-7). Currently, the monoclonal antibodies are part of the therapeutic strategy (8)

This example of inclusive scientific cooperation in time and space ought to be enlightened in the International Neurosciences Journal.

References

1. Dechambenoit G, Piquemal M, Giordano C, Cournil C, Ba Zeze V, Santini JJ. Spinal cord compression resulting from Burkitt's lymphoma in children. *Childs Nerv Syst.* 1996;**12**(4):210–4.
2. Molyneux EM, Rochford R, Griffin B, Newton R, Jackson G, Menon G, et al. Burkitt's lymphoma. *Lancet.* 2012;**379**(9822):1234–44.
3. Kafuko GW, Burkitt DP. Burkitt's lymphoma and malaria. *Int J Cancer.* 1970;**6**(1):1–9.
4. Burkitt D. A sarcoma involving the jaws in African children. *Br J Surg.* 1958;**46**(197):218–23.
5. Epstein MA, Achong BG, Barr YM. Virus Particles in Cultured Lymphoblasts from Burkitt's Lymphoma. *Lancet.* 1964;**1**(7335):702–3.
6. Mbulaiteye SM. Burkitt Lymphoma: beyond discoveries. *Infect Agent Cancer.* 2013;**8**(1):35.
7. Schmitz R, Young RM, Ceribelli M, Jhavar S, Xiao W, Zhang M, et al. Burkitt lymphoma pathogenesis and therapeutic targets from structural and functional genomics. *Nature.* 2012;**490**(7418):116–20.
8. Rochford R, Cannon MJ, Moormann AM. Endemic Burkitt's lymphoma: a polymicrobial disease? *Nat Rev Microbiol.* 2005;**3**(2):182–7.