



Clinical utility of circulating tumour DNA among patients with lymphoma in Zaria, Nigeria

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Abstract

Lymphoma has been described as the most common haematological malignancy (Chetan et al., 2014) world-wide. In Nigeria precise frequency of cancers, generally, is difficult, owing to the health-seeking behavior of many patients that is oriented toward alternative traditional medicine with attendant loss of data. Nevertheless, in a hospital-based study in Zaria, demonstrated that lymphoma ranked 5th in the list of all histologically-diagnosed cancers in Zaria (Rafindadi et al 2016). It has been shown that liquid biopsies of ctDNA can be effective when needle biopsies prove difficult, e.g. in isolated central nervous system disease or mediastinal diseases (Roschewski M et al., 2015, Kurtz et al 2015, Wang et al., 2015).

Methods: Eighty patients with histological confirmation of lymphoma and another 80 subjects with inflammatory lymphadenopathy were recruited at Ahmadu Bello University Teaching Hospital. From lymph node tissues of patients, DNA was isolated (using Bioneer AccuPrep Genomic DNA extraction kit) and sequenced (using Beckman Coulter CEQ 2000XL). This same DNA was targeted in the circulating blood of these patients and quantified as circulating tumour DNA (ctDNA). Levels of BCL-2 were determined using multiplex-nested PCR while prognostic scores of these patients were computed according to the International Prognostic Index for Lymphoma. Data were analyzed by using STATA (version 3.0) and GraphPad Prism (version 6.0).

Result: A strong association was observed between the levels of ctDNA and histological features of lymphoma ($p < 0.00001$). A marked difference in the median levels of ctDNA was observed between treatment naïve and treatment-experienced subjects with lymphoma ($p < 0.0001$) but no statistical difference was observed between Hodgkin's disease and Non-Hodgkin's lymphoma ($p = 0.45$). In regression analysis, ctDNA and BCL-2 levels predict poor prognostic score among study subjects.

Conclusion: ctDNA is a reliable marker for diagnosis, assessment of tumour load, follow-up and prognostication of lymphoma in Zaria.

Biography:

Bello Jamoh Yusuf has completed his MBBS programme from Bayero University, Kano, Nigeria and had MSc in Cancer Biology with commendation from Kingston University, London. He is a

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