Effectiveness of treatment regimens for adult T-cell leukemia/lymphoma (ATLL) patients and evaluation for predictive factors

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Abstract

Adult T-cell leukemia/lymphoma (ATLL) is a threatening disease of HTLV-1 infection. In this study, the predictive factors and routine therapies for ATLL were evaluated, in terms of laboratory tests and median survival times (MST) for better understanding of the disease. In a perspective-retrospective cohort study, the efficiencies of therapy regimens, including interferonalfa and zidovudine (IFN/ZDV), cyclophosphamide, vincristine, doxorubicin, dexamethasone (hyper-CVAD), lenalidomide/ZDV, cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP) were evaluated in 67 acute ATLL patients. The demographic, clinical, MST, and routine and molecular laboratory data were then collected and analyzed. The MST for acute and lymphoma subjects was 5 and 11 months, respectively, including 5 months (95% CI 3.378−6.622) for IFN/ZDV, 5 months (95% CI 2.06−7.94) for CVAD, 3months (95% CI 0.00−9.86) for lenalidomide/ZDV and 11 months (95%CI 8.459−13.54) for CHOP regimen. Importantly, patients who received IFN/ZDV and hyper-CVAD therapy, had a better OS (HR, 0.663; 95%CI, 0.540 to 0.814; P=0.0001), compared with the lenalidomide /ZDV alone. The MST for subjects with hypercalcemia was 5 months, and for patients with normal calcium level was 9 months (p=0.017). High expressions of BIM and CERB were more frequent in lymphomatous type, and considering these factors, platelet counts and HTLV-1-proviral load (PVL) might be predictive factors for differentiating acute and chronic types. Low MST was observed in acute and lymphomatous ATLL, even in the combinational chemo-therapeutic regimens. Therefore, it seems that ATLL treatment should be personalized according to the virus-PVL, activated survival signaling pathways, the platelet count and calcium level.

Keywords: ATLL, BIM, CERB, PVL

Table 1. Treatment strategy for all patients enrolled in this study

subtype	treatment	frequency	
		number(n)	percent
acute	arsenic. INF. zidovudin	25	28.4
	hyper CVAD	4	4.5
	lenalidomide.zidovudin	4	4.5
lymphoma	CHOP	30	34.1
chronic	Watchful Waiting	1	1.1
	arsenic	2	2.3