学位論文抄録

Clinical application of serum soluble CD30 levels as a biomarker of adult T-cell leukemia/lymphoma

（血清中可溶性 CD30 レベルの成人 T 細胞白血病・リンパ腫バイオマーカーとしての臨床応用）

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Abstract of the Thesis

Background and Purpose:

Adult T-cell leukemia/lymphoma (ATLL) is an incurable neoplasm of mature T cells with a median survival time of approximately 1 year. The aim of the present study was to investigate the clinical value of soluble CD30 (sCD30) levels as compared with soluble IL-2 receptor α chain (sIL-2R) levels in predicting the response to therapy in ATLL patients.

Methods:

The study subjects were ATLL patients who had been referred to the Department of Hematology of National Hospital Organization Kumamoto Medical Center between September 2005 and December 2010. The levels of sCD30 and sIL-2R in ATLL patients were measured in two different clinical settings: before an initial therapy of chemotherapy or gastric resection (n = 32) and before allogeneic hematopoietic stem cell transplantation (HSCT; n = 24). All patients completed the 2-year follow-up.

Results:

Before the initial therapy, sIL-2R ($p = 0.016$) and sCD30 ($p = 0.030$) were significant predictors of overall survival. The number of ATLL cells in peripheral blood (PB) was significantly correlated with sCD30 levels (Spearman correlation coefficient, $\rho = 0.46$; $p = 0.009$) but not with sIL-2R levels ($\rho = 0.16$; $P = 0.38$). sCD30 levels for long-term survivors (more than 2 years) were relatively low when ATLL cells accounted for <5% of PB, but this tendency was not observed when ATLL cells were more plentiful (≥5%) in PB. Before HSCT, sIL-2R ($p = 0.041$) and sCD30 ($p = 0.0003$) were significant predictors of overall survival. Moreover, sCD30 detected more patients with early death (within 100 days following HSCT) than sIL-2R. A combined test of sCD30 and CRP showed high sensitivity (81.8%) and specificity (84.6%) in detecting early death.

Conclusions:

Our results suggest that sCD30 may be a useful biomarker before HSCT therapy, because a high level of CD30 before HSCT is implicated in early death after HSCT. In cases with sCD30 level ≥ 170 U/ml and/or CRP ≥ 0.15 mg/dL, HSCT may not be suitable for ATLL patients. Early diagnosis and treatment of the proinflammatory state could reduce morbidity and mortality of patients undergoing HSCT.