MÆDICA - a Journal of Clinical Medicine

JOURNAL CLUB

Very high levels of soluble CD30 – *Marker of poor prognosis in patients with classical Hodgkin's lymphoma*

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CD30 is a membrane glycoprotein that belongs to the TNF-receptor superfamily. It is expressed on the surface of Reed-Sternberg cells, so it has become a primary diagnostic tool for Hodgkin's lymphoma (HL). Although HL can be cured in most cases, approximately 20–30% of patients experience relapse/disease progression during the treatment.

The identification of patients with a probability of cure of the disease inferior to 50% after effective chemotherapy [adriamycin, bleomycin, vinblastine, and dacarbazine (ABVD)], as well as of those with favorable prognosis (superior to 90%), becomes useful in order to tailor treatment and spare too intensive or toxic regimens.

The goal of this study was to evaluate, in a multinational setting, the contribution of serum levels of sCD30 as prognostic indicator in previously untreated patients with advanced stage HL. To minimize the effect of therapeutic regimens with potentially different efficacy, the analysis was limited to patients treated with ABVD or equivalent regimens.

The study included 321 patients with advanced stage HL, with a median follow-up of 72 months, between 1985 and 2002. The clinical and laboratory features of this patients with available sCD30 serum level have been compared with 500 advanced stage ABVD-treated HL without available sCD30.

Failure-free survival (FFS) was defined as the time interval between the beginning of treatment to primary treatment failure, relapse. Primary treatment failure was defined as failure to achieve the complete remission after the induction and overall survival (OS) as time measured from the beginning of treatment to death from any cause.

The results shown the prognostic efficacy of the combination of high levels of sCD30, abnormal LDH, and Ann Arbor stage IV. This three factors could identify two groups of patients with drastically different outcome depending on the presence of 0 or 1 vs. 2 or 3 adverse prognostic indices, with 5-year FFS of 81% vs. 40%, respectively ($P < 0.0001$).With multivariate analysis, sCD30, Ann Arbor stage, and LDH were significant independent factors in terms of FFS.

The study also confirmed the strong independent prognostic significance of sCD30 serum levels in treated patients with advanced stage HL. Increasing level of sCD30 was associated with a continuous worsening of FFS and OS, and patients with sCD30 =200 U/mL had a 5-year FFS of 39%. sCD30 value by itself was also capable of identifying the patients with favorable outcome, regardless of the presence of other clinical adverse prognostic factors. sCD30 =20 U/mL could identify 15% of patients with 5-year OS of 98%. ❑

In conclusion, in this large group of patients with HL, sCD30 serum level demonstrated a strong independent prognostic predictivity in identifying the patients with high risk of treatment failure.This marker alone or in combination with other clinical or laboratory variables could discriminate the large number of patients with very poor outcome after the conventional chemotherapy.

Comment on the paper:
Carlo Visco, Gianpaolo Nadali, Theodoros P et al – Very high levels of soluble CD30 recognize the patients with classical Hodgkin's lymphoma retaining a very poor prognosis. *European Journal of Haematology,* November 2006; 77; 5; Page 387