Prognostic significance of tumor burden in the blood of patients with erythrodermic primary cutaneous T-cell lymphoma

Julia J. Scarisbrick, Sean Whittaker, Alun V. Evans, Elisabeth A. Fraser-Andrews, Fiona J. Child, Alan Dean, and Robin Russell-Jones

Erythrodermic cutaneous T-cell lymphoma (CTCL) includes patients with erythrodermic mycosis fungoides who may or may not exhibit blood involvement and Sézary syndrome and in whom hematological involvement is, by definition, present at diagnosis. These patients were stratified into 5 hematologic stages (H0-H4) by measuring blood tumor burden, and these data were correlated with survival. The study identified 57 patients: 3 had no evidence of hematologic involvement (H0), 8 had a peripheral blood T-cell clone detected by polymerase chain reaction (PCR) analysis of the T-cell receptor gene and less than 5% Sézary cells on peripheral blood smear (H1), and 14 had either a T-cell clone detected by Southern blot analysis or PCR positivity with more than 5% circulating Sézary cells (H2). Twenty-four patients had absolute Sézary counts of more than 1 × 10^6 cells per liter (H3), and 8 patients had counts in excess of 10 × 10^6 cells per liter (H4). The disease-specific death rate was higher with increasing hematologic stage, after correcting for age at diagnosis. A univariate analysis of 30 patients with defined lymph node stage found hematologic stage (P = .045) and lymph node stage (P = .013) but not age (P = .136) to be poor prognostic indicators of survival.

Multivariate analysis identified only lymph node stage to be prognostically important, although likelihood ratio tests indicated that hematologic stage provides additional information (P = .035). Increasing tumor burden in blood and lymph nodes of patients with erythrodermic CTCL was associated with a worse prognosis. The data imply that a hematologic staging system could complement existing tumor-node-metastasis staging criteria in erythrodermic CTCL. (Blood. 2001; 97:624-630)

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Introduction

Mycosis fungoides is the most common form of cutaneous lymphoma and represents 70% of all cases of cutaneous T-cell lymphoma (CTCL). Patients with mycosis fungoides normally present with cutaneous patches and plaques and pursue an indolent clinical course. However some patients may progress to erythrodermic disease, which may be associated with morphological changes in the peripheral blood. By contrast, Sézary syndrome is a leukemic variant of CTCL that is characterized clinically by erythroderma, pruritus, and peripheral lymphadenopathy. It is an aggressive disease associated with a poor prognosis and median survival of 3 years.

Mycosis fungoides may be classified by the tumor-node-metastasis (TNM) staging system devised by the Mycosis Fungoides Co-operative Group and the National Cancer Institute (NCI), Bethesda, MD, in 1979. It is based upon the type of skin lesion, extent of skin involvement, and the presence of lymph node or visceral disease. This staging system has been shown to stratify patients with mycosis fungoides into useful prognostic categories. A review of the reported 5-year survival rates of patients with different stages of mycosis fungoides found survival rates of 80% to 90% for patients with stage I; 60% to 70%, stage II; 40% to 50%, stage III; and 25% to 35%, stage IV.

The NCI also defined a B1 category for hematological involvement representing more than 5% Sézary cells, as a percentage of the total lymphocyte count. However, the prognostic significance of B1 was uncertain at that time and was not therefore included in the overall staging system. In 1988, the NCI revised its definition of B1 from 5% to 20% on the grounds that this figure carried greater prognostic significance, although in multivariate analysis the most important variables for survival were skin stage and visceral involvement.

Circulating Sézary cells were originally identified by Sézary et al in 1938 as large atypical mononuclear cells (“cellules monstreuses”). Some 30 years later, the distinctive grooved nucleus was described and became the morphologic hallmark of the Sézary cell. Later that decade the Sézary cell nucleus was further characterized by electron microscopy. Large Sézary cells greater than 14 μm are specific to Sézary syndrome, but smaller cells with Sézary-type morphology may be present in 20% to 25% of patients with mycosis fungoides, in certain inflammatory dermatoses including eczema and psoriasis, and even in some healthy controls. Furthermore, Sézary cells may be produced in vitro by stimulating normal T cells.

A peripheral blood smear is used to count the number of Sézary cells per 100 lymphocytes and/or leukocytes, but there has been no consensus on the percentage of Sézary cells required for the diagnosis of Sézary syndrome. Prior to the introduction of T-cell receptor gene analysis, the main concern was to exclude patients...
with benign inflammatory disorders. Vonderheid et al reported that a Sézary count of greater than 15% was seldom found in benign diseases, and on examination of a peripheral blood smear, it was the criterion that best correlated with the demonstration of a chromosomally abnormal clone. The presence of large cells (15 to 20 μm) was also predictive of a malignant clone. Schechter et al found that patients with more than 20% large Sézary cells (greater than 11 μm) had a poorer survival rate than those with a predominately small cell variant. However, the skin stage and age were the most important pretreatment risk factors for survival. Of note, peripheral blood involvement was not found to be an independent risk factor for T4 stage disease. However, a more recent study by Kim et al reported that in erythrodermic CTCL, the presence of peripheral blood Sézary cells representing more than 5% of the total lymphocyte count was found to be an independent prognostic factor influencing survival. Other important variables affecting survival included stage III versus stage IV and age more than 65 years. Russell-Jones and Whittaker therefore proposed that 5% may be used as a minimum definition of Sézary syndrome provided that a peripheral blood T-cell clone can be demonstrated by other means. By contrast, the EORTC cutaneous lymphoma group suggested that a peripheral blood T-cell clone plus a CD4:CD8 ratio greater than 10 were useful criteria in distinguishing Sézary syndrome from other forms of erythroderma. Finally, Winkelman and Peters proposed an absolute Sézary cell count of 1 × 10^9 cells per liter for the diagnosis of Sézary syndrome. This has recently been adopted by the International Society for Cutaneous Lymphoma (ISCL) in their consensus conference on erythrodermic CTCL (Vonderheid et al, manuscript submitted, 2000).

Our group has recently shown that single-strand conformational polymorphism/polymerase chain reaction (PCR) analysis of the T-cell receptor γ gene is a useful method for detecting early peripheral blood involvement in patients with mycosis fungoides. The presence of a peripheral blood T-cell clone was found to have prognostic significance, which was independent of skin stage and age. Single-strand conformational polymorphism/PCR analysis has a detection sensitivity between 0.1% and 1% compared with Southern blot T-cell receptor gene analysis, which has a sensitivity closer to 5%. We therefore stratified our patients according to the different methods for detection of hematologic involvement in erythrodermic CTCL. Patients with no evidence of a peripheral blood T-cell clone by both PCR and Southern blot T-cell receptor gene analysis were assigned H0 stage. Patients who were PCR-positive but Southern blot-negative and had less than 5% circulating Sézary cells on a peripheral blood smear were assigned H1 stage disease. Patients with H2 stage disease were either PCR- or Southern blot-positive and had more than 5% circulating Sézary cells. The H3 stage comprised patients with more than 1 × 10^9 circulating Sézary cells per liter; H4 stage included patients with more than 10 × 10^9 circulating Sézary cells per liter. We undertook a retrospective analysis of 57 patients with erythrodermic CTCL, stratified the patients into one of these 5 groups according to results at initial presentation, and correlated this hematologic stage with outcome.

Table 1. Hematologic staging system for patients with erythrodermic cutaneous T-cell lymphoma, as defined by T-cell receptor gene rearrangement studies, Sézary count, and CD4:CD8 ratio

<table>
<thead>
<tr>
<th>Hematological stage</th>
<th>SSCP/PCR TCR gene analysis studies</th>
<th>Southern blot TCR gene analysis studies</th>
<th>Number of Sézary cells, %</th>
<th>Absolute Sézary count, × 10^9 cells per L</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0</td>
<td>Polyclonal</td>
<td>Polyclonal</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>H1</td>
<td>Clonal</td>
<td>Polyclonal</td>
<td>&lt; 5</td>
<td>0</td>
</tr>
<tr>
<td>H2</td>
<td>Clonal</td>
<td>Clonal</td>
<td>&gt; 5</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>H3</td>
<td>Clonal</td>
<td>Clonal</td>
<td>&gt; 5</td>
<td>1-10</td>
</tr>
<tr>
<td>H4</td>
<td>Clonal</td>
<td>Clonal</td>
<td>&gt; 5</td>
<td>&gt; 10</td>
</tr>
</tbody>
</table>

SSCP indicates single-strand conformational polymorphism; PCR, polymerase chain reaction; TCR, T-cell receptor.

Table 2. Staging system for mycosis fungoides

<table>
<thead>
<tr>
<th>Stage</th>
<th>Tumor</th>
<th>Lymph node</th>
<th>Metastasis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>T1</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>IB</td>
<td>T2</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>IIA</td>
<td>T1 or T2</td>
<td>N1</td>
<td>M0</td>
</tr>
<tr>
<td>IIB</td>
<td>T3</td>
<td>N0 or N1</td>
<td>M0</td>
</tr>
<tr>
<td>III</td>
<td>T4</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>IVA</td>
<td>T1-T4</td>
<td>N2 or N3</td>
<td>M0</td>
</tr>
<tr>
<td>IVB</td>
<td>T1-T4</td>
<td>N0-N3</td>
<td>M1</td>
</tr>
</tbody>
</table>

The staging system for mycosis fungoides was devised by Bunn and Lamb in 1979.

The staging system for mycosis fungoides was devised by Bunn and Lamb in 1979. T indicates tumor; T1, patches or plaques over less than 10% of the body surface; T2, patches or plaques over more than 10% of the body surface; T3, more than one tumor; T4, erythroderma; N, lymph node; N0, no palpable lymphadenopathy or histological evidence of mycosis fungoides; N1, palpable node, no histological evidence of mycosis fungoides; N2, no palpable nodes, but histological evidence of mycosis fungoides; N3, palpable nodes and histological evidence of mycosis fungoides; M, metastasis; M0, no visceral involvement; M1, histologically confirmed visceral involvement.

Patients, materials, and methods

Patient selection

We initially selected 84 patients with erythrodermic CTCL who were seen at the Skin Tumour Unit, St John’s Institute of Dermatology, London, England, between 1980-1999. All patients had erythroderma (defined as skin involvement of more than 90%). Those with mycosis fungoides had shown diagnostic skin histology and a cutaneous T-cell clone, as demonstrated by T-cell receptor gene rearrangement studies. Patients with Sézary syndrome had erythroderma with compatible skin histology, atypical circulating cells, and a peripheral blood T-cell clone. For the purposes of this study, patients were not divided into those with features of erythrodermic mycosis fungoides and those with Sézary syndrome, as this distinction is made on hematological criteria, which is the subject of the study.

Only patients with at least a 3-year follow-up (diagnosed in 1997 or earlier) or patients who were diagnosed after 1997 but subsequently died from a CTCL-related disease were included in the study. Patients diagnosed elsewhere and referred to St John’s within 6 months, providing no systemic treatment had been initiated, were also included in the study. Using these criteria, 57 of the 84 patients with erythrodermic CTCL were eligible for the study.

From the hospital records, the automated total white cell count, lymphocyte count, CD4:CD8 ratio, Sézary count, and serum lactate dehydrogenase (LDH) level were recorded from the time of diagnosis of erythrodermic CTCL. Peripheral blood smears were examined for the presence of Sézary cells (A.D., Norfolk and Norwich Hospital, Norwich, England) as previously described. The absolute Sézary count was calculated from the percentage of atypical cells on a smear and the absolute lymphocyte count. These data were used to stage the extent of hematologic involvement in each patient. The staging criteria H0-H4, which was discussed in the “Introduction,” is shown in Table 1. Each patient was staged from initial diagnosis at the Skin Tumour Unit or, in the case of those referred from elsewhere, within the first 6 months after diagnosis.

In addition, we recorded the age at diagnosis of erythrodermic CTCL, presence of clinical lymphadenopathy, and results of lymph node biopsies performed at diagnosis. A lymph node stage was assigned to each patient according to TNM criteria (Table 2). In our institute, only patients with
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follow-up time was slightly less, 3.8 years versus 4.3 years. There were 17 deaths among this subgroup; 14 deaths were CTCL-related. Of these, one patient had N0 stage disease, 2 patients had N1 stage, and 11 patients had N3 stage (Table 5).

In a univariate analysis, increasing lymph node stage was found to be significantly associated with a poor prognosis (hazard ratio, 2.86; \( P = .013 \)). Increasing hematologic stage was also associated with a worse prognosis (hazard ratio, 1.89; \( P = .045 \)), as was increasing age at diagnosis. However, the latter did not reach statistical significance (hazard ratio, 1.52; \( P = .136 \)). In a multivariate analysis, lymph node stage at diagnosis was the only independent prognostic variable identified (hazard ratio, 2.69; CI = 1.11-6.50; \( P = .028 \)). However, the confidence interval was wide enough to suggest that the hematologic stage and age may provide additional useful prognostic information. Likelihood ratio tests revealed that hematologic stage (hazard ratio, 2.00; \( P = .035 \)), but not age (hazard ratio, 1.69; \( P = .097 \)), provided further prognostic information in patients with an established lymph node stage.

Discussion

We have devised a detailed hematologic staging system to quantify blood involvement in erythrodermic CTCL. We found that with each increase in hematologic stage, there was a rise in the death rates, and this was found to be statistically significant comparing both H2 with H0-H1 stage disease and H3 with H0-H2 stage disease.

The group with the most favorable prognosis included patients with no evidence of hematological involvement at diagnosis (H0) and those with a T-cell clone detected by PCR and less than 5% Sézary cells (H1). In this group, only one patient died from disease during a mean follow-up period of 7.8 years, which equates to a disease-specific death rate of 0.01. Patients with H2 stage disease, which is equivalent to the original B1 rating by the NCI and also the definition chosen by Russell-Jones and Whittaker, had 5-times higher disease-specific death rate than those with H0 and H1 stage disease and were found to have a worse survival (\( P = .081 \)). The H3 stage, defined as having more than \( 1 \times 10^9 \) cells per liter circulating Sézary cells, was the largest group and included 24 patients. This stage correlates with the definition for blood involvement in Sézary syndrome used by the ISCL, and patients with H3 stage disease had a disease-specific death rate that was 3.5 times greater than the patients with H0-H2 stage disease (\( P = .036 \)). Finally, patients with H4 stage disease, with leukemic involvement of more than \( 10^9 \) Sézary cells per liter, had the worst prognosis, which was 2.5 times higher than patients with H0-H3 stage disease (\( P = .091 \)).

We distinguished between CTCL-related and CTCL-unrelated deaths as determined by cause of death entered on the death

Table 4. Comparison of the observed and expected deaths in different hematologic stages of erythrodermic cutaneous T-cell lymphoma

<table>
<thead>
<tr>
<th>Hematological stage</th>
<th>Deaths observed, no.</th>
<th>Deaths expected, no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0 and H1</td>
<td>1</td>
<td>7.5</td>
</tr>
<tr>
<td>H2</td>
<td>6</td>
<td>6.14</td>
</tr>
<tr>
<td>H3</td>
<td>15</td>
<td>11.22</td>
</tr>
<tr>
<td>H4</td>
<td>6</td>
<td>3.14</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>28</td>
</tr>
</tbody>
</table>

These statistics assume there was no difference in survival between each stage.
survival of only 2 years. The fulfills the EORTC criteria of Sézary syndrome have a median CD4:CD8 ratio of more than 10 equates to an absolute Sézary CD4:CD8 ratio of 6.6 is equivalent to H2 stage disease, whereas a was extremely variable (Table 3). Our data indicate that a diagnosis in centers where Sézary counts are not available. We did not include CD4:CD8 ratios in our hematological staging system, as the value is dependent on the absolute CD8 count in addition to the CD4 count. Even so, we did find that the mean CD4:CD8 ratio increased with each stage, although the range within each group was extremely variable (Table 3). Our data indicate that a CD4:CD8 ratio of 6.6 is equivalent to H2 stage disease, whereas a CD4:CD8 ratio of more than 10 equates to an absolute Sézary count of $1 \times 10^9$ cells per liter. This would explain why patients fulfilling the EORTC criteria of Sézary syndrome have a median survival of only 2 years.

A CD4:CD8 ratio of greater than 10 has been proposed by the EORTC for defining patients with Sézary syndrome and is used for diagnosis in centers where Sézary counts are not available. We did not include CD4:CD8 ratios in our hematological staging system, as the value is dependent on the absolute CD8 count in addition to the CD4 count. Even so, we did find that the mean CD4:CD8 ratio increased with each stage, although the range within each group was extremely variable (Table 3). Our data indicate that a CD4:CD8 ratio of 6.6 is equivalent to H2 stage disease, whereas a CD4:CD8 ratio of more than 10 equates to an absolute Sézary count of $1 \times 10^9$ cells per liter. This would explain why patients fulfilling the EORTC criteria of Sézary syndrome have a median survival of only 2 years.

The serum LDH increased progressively with stage, from 656 U/L in H0-H1 stage disease to 918 U/L in H4 stage disease. This suggests that serum LDH may provide a simple low-cost means of determining the tumor burden in erythrodermic CTCL; however, data were only available on 25 patients. A rise in serum LDH to more than 10% of the normal value has previously been found to be a poor prognostic feature in mycosis fungoides and Sézary syndrome.

However, in our cohort of 57 patients with erythrodermic disease, even those with a low peripheral blood tumor burden (H0 and H1 stages) had a mean serum LDH of more than 10% of the normal value (greater than 638 U/L).

Our data have found that the mean survival of patients with erythrodermic CTCL decreases with increasing hematological stage. In particular, maximum survival time was reduced from 7.8 years in H0 and H1 stages, 3.9 years in H2, 3.4 years in H3, and 3.0 years in H4 stage disease. However, the power of this study was not able to determine any statistical difference in the survival of patients with H2, H3, or H4 stage disease. A larger multicenter study would be required to determine if these hematological stages provide independent prognostic information. In addition, other important prognostic features need to be assessed in relation to hematological stage.

We only selected patients with erythrodermic CTCL (mycosis fungoides and Sézary syndrome) and thus eliminated any bias from cutaneous stage, which has consistently been found to be the most important determinant of outcome in CTCL. Increasing age has also been shown to be associated with a worse prognosis in CTCL and therefore we corrected for this by using the Cox proportional regression hazard model. Other poor prognostic indicators identified in CTCL include lymph node stage and visceral spread.

In this study, none of the patients had histologic evidence of visceral disease, although 49 of the 57 patients had peripheral lymphadenopathy, and the lymph node stage may have an impact.

### Table 5. Comparison of clinical parameters in patients with different lymph node stages with erythrodermic cutaneous T-cell lymphoma

<table>
<thead>
<tr>
<th>Lymph node stage</th>
<th>Patients, no.</th>
<th>Mean age at dx, y</th>
<th>Mean follow-up, y</th>
<th>Deaths, no.</th>
<th>Death rate y−1</th>
<th>CTCL deaths, no.</th>
<th>Death rate from CTCL y−1</th>
</tr>
</thead>
<tbody>
<tr>
<td>N0</td>
<td>8</td>
<td>62</td>
<td>6.5</td>
<td>2</td>
<td>0.038</td>
<td>1</td>
<td>0.019</td>
</tr>
<tr>
<td>N1</td>
<td>6</td>
<td>62</td>
<td>4.7</td>
<td>3</td>
<td>0.106</td>
<td>2</td>
<td>0.071</td>
</tr>
<tr>
<td>N2</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>N3</td>
<td>16</td>
<td>66</td>
<td>2.2</td>
<td>12</td>
<td>0.341</td>
<td>11</td>
<td>0.31</td>
</tr>
</tbody>
</table>

For abbreviations, see Table 3.

### Table 6. Comparison of various studies’ survival data in patients with mycosis fungoides and Sézary syndrome

<table>
<thead>
<tr>
<th>Study, first author, place, publication y</th>
<th>Total patients studied, no.</th>
<th>Inclusion of MF and/or SS</th>
<th>Blood involvement, definition (N = no. patients)</th>
<th>Median survival, y</th>
<th>Independent prognostic variables identified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kim, California, 1995</td>
<td>106</td>
<td>Erythrodermic MF and SS</td>
<td>Sézary cells &gt; 5% of total lymphocytes (N = 35)</td>
<td>2.6</td>
<td>6.8</td>
</tr>
<tr>
<td>Diamandidou, Texas, 1999</td>
<td>115</td>
<td>MF and SS</td>
<td>Sézary cells &gt; 5% of total lymphocytes (N = 12)</td>
<td>2.5</td>
<td>11.8</td>
</tr>
<tr>
<td>Toro, New York, 1997</td>
<td>101</td>
<td>MF and SS</td>
<td>&gt; 20% lymphocytes with atypical nuclear convolutions (N = 8)</td>
<td>1.25</td>
<td>15.8</td>
</tr>
<tr>
<td>Sausville, Maryland, 1988</td>
<td>152</td>
<td>MF and SS</td>
<td>&gt; 20% lymphocytes with atypical nuclear convolutions (N = 52)</td>
<td>3.3</td>
<td>10</td>
</tr>
<tr>
<td>Schechter, Maryland, 1987</td>
<td>160</td>
<td>MF and SS</td>
<td>Convoluted cells &gt; 20% total lymphocytes (N = 60)</td>
<td>3.5</td>
<td>&gt; 8</td>
</tr>
<tr>
<td>Bernengo, Italy, 1999</td>
<td>62</td>
<td>SS</td>
<td>Sézary cells &gt; 10% of peripheral blood leukocytes</td>
<td>2.6</td>
<td>—</td>
</tr>
<tr>
<td>Beuchner, Minnesota, 1983</td>
<td>39</td>
<td>SS</td>
<td>&gt; 1 × 10⁹ cell per L</td>
<td>3.3</td>
<td>—</td>
</tr>
</tbody>
</table>

Independent prognostic variables includes median survival of patients with blood involvement and patients without blood involvement in years from diagnosis and independent prognostic variables identified in the study. SS indicates Sézary syndrome; MF mycosis fungoides.
on the analysis of survival data by hematologic stage. We therefore analyzed a subgroup of 30 patients. Eight patients without clinically palpable lymph nodes at diagnosis were assumed to be in N0 stage, as the presence of adenopathy correlates with advanced lymph node stage; however, this is not absolute, and rarely, advanced stages may be present without adenopathy. Twenty-two patients had a histologically proven lymph node stage at diagnosis. We excluded the remaining 27 patients with peripheral adenopathy in whom a lymph node biopsy was not performed at diagnosis. Lymph node and hematologic stages, but not age at diagnosis, were found to be associated with a worse prognosis in univariate analysis. In a multivariate analysis, lymph node stage was the only independent variable associated with a worse outcome, although likelihood ratio tests did show that hematologic stage but not age provides additional prognostic information (P = .035). These data suggest that lymph node stage provides more useful prognostic information than hematologic stage. However, in erythrodermic CTCL, histologically proven lymph node involvement was only documented in 22 patients at diagnosis, and 27 patients with peripheral lymphadenopathy at presentation did not have a biopsy at diagnosis and were excluded from this analysis. This may have biased results because patients with more extensive cutaneous disease or a higher tumor burden in blood would be more likely to be referred for immediate lymph node biopsy, and those with less severe disease may have been biopsied at a later date. In addition, it was presumed that those patients without clinical lymphadenopathy at diagnosis, none of whom had a biopsy, were N0 stage, but they could have had N2 stage disease.

Overt bone marrow involvement is considered a late feature occurring only in advanced stages of Sézary syndrome and bone marrow biopsies have not been routinely used in our department as part of the staging procedure for erythrodermic CTCL. Bone marrow biopsies were only performed on 5 of 57 patients at initial presentation: 2 patients with H3 stage disease, both of whom had a normal trephine, and 3 patients with H4 stage disease, one of whom had a scanty infiltrate of Sézary cells, one patient had myelodysplasia with no evidence of the Sézary cells, and the other patient had a normal trephine biopsy. Although bone marrow involvement has been associated with a reduced survival in CTCL, including Sézary syndrome, it has not been shown to be an independent poor prognostic indicator in multivariate analysis.

The survival of patients with erythrodermic CTCL has previously been shown to be worse in patients with hematologic involvement than in patients without hematologic involvement. Table 6. However, the differing criteria for both hematologic involvement in CTCL and a diagnosis of Sézary syndrome among different study groups has made accurate comparisons of survival data difficult in erythrodermic CTCL. Data published in the literature show a variation in survival from 1.25-3.5 years (Table 6). We recently found that in patients with mycosis fungoides, the presence of a peripheral blood T-cell clone was an independent prognostic factor for survival in patients with T1 to T3 stage disease. However, there were insufficient patients with T4 stage disease to determine if a peripheral blood T-cell clone was of any prognostic value in erythrodermic mycosis fungoides.

Here we have found a positive correlation between increasing peripheral blood tumor burden and a reduced survival in erythrodermic CTCL. It is likely that at diagnosis the hematologic stage could identify those patients with a poorer prognosis. Further studies are now required to confirm this finding. The lymph node stage provides more independent prognostic data but may require hospital admission, whereas hematologic staging is performed at the initial out-patient assessment, thereby enabling stratification in any future clinical trials. The development of a universal hematologic staging system for erythrodermic CTCL would also allow more accurate comparison of data between different study groups and may eventually be used alongside the TNM staging system to determine prognosis.

Acknowledgment

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References


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