long lymphoma. As far as we know, this phenomenon has not been previously reported, and the significance of this observation remains elusive. In addition, in our series MGMT hypermethylation does not seem to play a significant role in the response to chemotherapy in CTCL patients. The possibility that MGMT hypermethylation may be a negative prognostic factor identifying a specific subset of lymphomas cannot be completely ruled out.

In conclusion, our results demonstrate that hypermethylation in p15(INK4b) and p16(INK4a) promoter genes seems to play a role in the pathogenesis of cutaneous T-cell lymphoma. These phenomena occur independently as tumor-specific events and probably are not-dependent on the stage of the disease. MGMT promoter hypermethylation occurs in a significant percentage of T-cell cutaneous lymphomas.

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Key words: methylation status, MGMT, primary cutaneous T-cell lymphoma.

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References

and variation, which supports the intuitive belief that variance, there was no apparent explanation for why between subject variation in the cohort of variances being 56.5, 4.6 and 16.1 for males, 48.9, 6.0 and 18.9 for females, respectively. Reticulocyte variance when measured on the Sysmex platform was higher than when measured on the Sysmex platform (p<0.001). These quantitative data illustrate that for Hb the major component of variance is attributable to between subject variation, which supports the intuitive belief that comparing an athlete’s current values with their own longitudinal data rather than population-derived thresholds will provide greater resolution when searching for signs of blood doping. The similarity of within subject variation apparent across different sports augurs well for the universality of this approach. Although of secondary importance to the Passport concept (which is contingent upon consistency within subject variance), there was no apparent explanation for why between subject variation in the cohort of female rowers was markedly lower than for other groups, and this deserves closer scrutiny.

Our results also emphasize the need to quantify, and adjust for, instrument bias for reticulocyte assays. Instrument bias can be quantified by using the mean value from a cohort of athletes as a de facto calibration agent, and bias negated by using a paper adjustment to standardize values.

The ADVIA-Sysmex bias in this study is consistent with that found in previous research, and underlines the need to document the type of instrument used when measuring reticulocytes.

Table 1. Components of variation of hemoglobin concentration and reticulocytes in two cohorts of athletes.

<table>
<thead>
<tr>
<th></th>
<th>Rows (n=83)</th>
<th>Females (n=31)</th>
<th>Footballers (n=288)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb (g/L)²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between subjects</td>
<td>45.1</td>
<td>18.3</td>
<td>49.7</td>
</tr>
<tr>
<td>Between days</td>
<td>4.4</td>
<td>5.9</td>
<td>5.4</td>
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<tr>
<td>Within subjects</td>
<td>18.9</td>
<td>13.5</td>
<td>17.3</td>
</tr>
<tr>
<td>Retics (%³)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between subjects</td>
<td>0.0127</td>
<td>0.0139</td>
<td>0.0135</td>
</tr>
<tr>
<td>Between days</td>
<td>0.0031</td>
<td>0.0043</td>
<td>0.0036</td>
</tr>
<tr>
<td>Within subjects</td>
<td>0.0083</td>
<td>0.0103</td>
<td>0.0085</td>
</tr>
</tbody>
</table>

Analysis of variance partitioned total variation into ‘Between subjects’, ‘Between days’ (within instruments) and ‘Within subjects’ from hematologic data collected longitudinally over a period of 33 months (rowers) or 36 months (football players).

Figure 1. Square root transformed reticulocyte values (√%; mean ± SE, standard error of the mean was used to facilitate comparison of differences between instruments) of elite rowers derived from either an Advia 120 Hematology analyzer or a Sysmex Roche XE2100. Subgroups of a cohort of n=83 males and n=31 females were measured on an ADVIA (n=66M and 26F) and one month later on a Sysmex (n=58M and 18F).

comparison, the variance components for both males (n=739) and females (n=413) competing in various sports were measured over a 21-day period, was of the same magnitude reported here for males (the between subject, between days and within subject variances being 56.5, 4.6 and 16.1 for males, 48.9, 6.0 and 18.9 for females, respectively). Reticulocyte variance within subjects was approximately 0.75 times that of between subject variance, regard-

References

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Key words: doping, longitudinal variation.

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