Immunophenotyping of T-cell and NK-cell neoplasms

Neoplasm / Marker	CD2	CD3*	CD4	CD5	CD7	CD8	CD 30	CD 56	Cytotoxic proteins	EBV**	Other useful antibodies
T-cell prolymphocytic leukaemia	+	+ (1)	+/- (2)	-	+	-/+ (2)	-	-	-	-	CD52+
T-cell large granular lymphocytic leukaemia	+	+	-/+ (3)	-/+	-	+ (3)	-	-	+	-	CD57+
Chronic lymphoproliferative disorder of NK cells	-/+ (4)	- (5)	-	+	-/+	+	-	+/- (6)	+	-	
Aggressive NK- cell leukaemia	+	- (5)	+	+	-	-	-	+	+	+	CD57-/+; CD16+/-
EBV+ T-cell lymphoproliferative disorders of childhood	+	+	-/+ (7)	+	+	+/- (7)	-	-/+ (8)	+	+	
Adult T-cell leukaemia/lymphoma	+	+	+/-	+	-	-/+	-/+	-	-	-	CD25+; CCR4+; FOXP3
Extranodal NK/T cell lymphoma nasal type	+	- (1)	-	-	- (9)		- (9)	+ (10)	+	+	
Enteropathy associated T-cell lymphoma	+	+	-	-	+	-/+	+ (11)	-/+	+	-	CD103+
Hepatosplenic T-cell lymphoma	+	+	-	-		-/+		+/-	+ (12)	-	TCRδ+; TCRαβ-
Subcutaneous panniculitis like T-cell lymphoma	+	+/-	-	+	-	+	-	-	+	-	
Mycosis fungoides / Sezary syndrome	+	+	+	+	-	- (13)	-	-	- (14)	-	CLA+ (15)
Primary cutaneous CD30+ lymphoproliferative disorder	-/+	-/+	+	-/+	-	- (16)	+ (17)	- (18)	+	-	EMA-; ALK-; CD15-
Primary cutaneous γ-δ T-cell lymphoma	+	+	-	-	+/-	-	-	+/-	+	-	TCRδ+
Peripheral T-cell lymphoma	+	+/-	-/+	-/+	-/+	-/+ (20)	- (21)	-/+ (22)	-/+ (23)	-	CD52-/+; TCRβ+ CD20-/CD79a- (24)
Angioimmunoblastic T-cell lymphoma	+	+	+	+/-	+	-/+	-/+	-	-	+	CD10+; CD21+; CD23+; PD-1+/-; CD35+;CXCL13+/-;
Anaplastic large cell lymphoma ALK positive	+/- (25)	-/+ (26)	+/- (25)	+/- (25)	+/- (25)	- (27)	+	-	+	-	ALK-1+; CD25+; EMA+/-: CD43+/-; CD45-/+; BCL-2-
Anaplastic large cell lymphoma ALK negative	+/-	+/-	+/-	-/+	+/-	-/+	+ (28)	-	+	-	ALK-1-; CD43+; EMA+/-;

Explanations: + >90% positive; +/- 50-90% positive; -/+ 10-50% positive; - < 10% positive
*** surface CD3; ** EBER or/and LMP1**

Comments to Table 2
Immunophenotyping of T-cell and NK-cell neoplasms

1. Often weak staining.
2. 60% CD4+/CD8-; 25% CD4+/CD8+; 15% CD4-/CD8+.
3. 80% CD4-/CD8+; 20 % CD4+/CD8- or CD4-/CD8-.
4. Diminished or lost expression.
5. Negative on the surface but positive in cytoplasm for CD3ξ.
6. Weak expression.
7. Cases secondary to acute EBV infection are usually CD8+, while cases in the setting of CAEBV are usually CD4+. Only rare cases are CD4+/CD8+.
8. Only cases with NK phenotype.
9. Occasional cases may be positive.
10. CD3ξ+/CD56- cases are also included if EBV+/cytotoxic molecules+, while cases CD3+/CD56-/EBV- should be diagnosed as peripheral T-cell lymphoma.
11. Varying proportion of cells.
12. Usually negative for Granzyme B, but positive for TIA1 and granzyme M.
13. Rare cases may be CD8+, more frequently reported in paediatric cases.
14. Rare cases in early stage, but more advance cases may show a positive subpopulation of cells.
15. CLA (Cutaneous Lymphocyte Antigen) is positive in most cases unlike systemic ALCL.
16. <5% cases may show CD8+.
17. Some cases of type B lesions in lymphomatoid papulosis may be CD30-.
18. Rare cases may show CD56+.
19. CD4+/CD8+ and CD4-/CD8+ may be seen.
20. CD4+/CD8+ and CD4-CD8+ sometimes seen.
21. Positivity for CD30 and even CD15 may be seen especially in rare TCRγδ+ cases.
22. Some cases may be positive.
23. Usually expressed in extranodal forms but is rare in nodal locations.
24. Positivity for CD20/CD79a may be rarely seen.
25. Positive in 70-80% cases.
26. Only 30% cases are positive.
27. Rare CD8+ cases are described.
28. Virtually all cells should be positive.