EP300, an independent adverse prognosis factor for NK/T cell lymphoma, may be activated by EBV and promote tumor recurrence though NFκB pathway.

Wenjuan Yin1,2, Wenyong Sun2, Haiyan Yang3, Meijuan Wu2, Chaooi Wu2, Dan Su2, Minghua Ge1,4,5.  
Email for Corresponding author: gemingh@163.com

In this study, 137 NKTCL cases were collected and performed IHC for EP300, Akt, LMP1, NFκB-P65. Results showed that expression of EP300 was obviously associated with disadvantage survival of NKTCL and significantly correlated with Akt, NFκB-p65 expression, furthermore, Akt expression was closely related to EBV-LMP1. Therefore, it is speculated that EBV may activate NFκB-P65 by activating EP300 via LMP1/ Akt pathway and promote the unfavorable outcomes of NKTCL.

Background

NK/T cell lymphoma (NKTCL), with a poor prognosis and high prevalence in Chinese, is closely related to EBV. EP300 has been reported associated with poor outcomes in other Lymphoid and hematopoietic tumors, however, its prognostic affect on NKTCL and relationship with EBV is still poorly understood. Our previous study found that expression of EP300 was obviously elevated in NKTCL extensive lesions and recurrence lesions than in the localized lesions and primary lesions, and that EP300 expression was significantly correlated poorer survival. So we did and will do more research on the mechanisms how EP300 affect the outcomes of NKTCL.

Results:

Figure 1a-f: EP300 (p<0.0001) and NFκB-p65 expression (p=0.0035) were obviously associated with poor survival; Besides, high IPI score (p<0.0001), decrease of albumin (p=0.0047) were also associated with poor survival. While, radiotherapy (p<0.0001) and upper aerodigestive tract origin (p=0.0084) were favorable factors for survival.

Multiple COX regression analysis indicated that EP300 expression (95% CI: 1.723–5.751) and IPI (95% CI: 1.318–4.703) were independent prognostic factors for survival.

Further research on molecular mechanism how EP300 affect NKTCL outcomes and its relationship with EBV is on schedule:
1. In vitro study on NKTCL cell lines
2. In vivo study on nude Mouse model