Background and aims SLE is multisystem autoimmune disease, having known HLA-DRB1*15 and DRB1*03 risk alleles and an association with EBV in the Caucasoid population. We compared the association of HLA-DRB1 and EBV in North Indian cohort of adult and paediatric SLE.

Methods We analysed 109 adult SLE (aSLE) and 52 paediatric SLE (pSLE) with 278 age and sex matched control adult (CA) and paediatric (CP) for HLA-DRB1 genotyping by PCR-SSP. EBV-IgM and IgG to VCAp125, VCAp19, EBNA-1, p22 and EA-D by line blot assay and EBV load by real-time PCR.

Results The frequencies of DRB1*15 and DRB1*03 were higher in SLE (OR=2.57 and 1.67 respectively) compared to controls. aSLE had higher frequencies of DRB1*03 (OR=2.33) and DRB1*04 (OR=7.51) compared to pSLE whereas, pSLE had higher frequency of DRB1*15 (OR=2.42) compared to aSLE. pSLE had more 3+ to 4+ positivity of EBV-IgG to VCAp125 compared to aSLE (p=0.0008). EBV-IgM to VCAp19, EBNA-1 and EA-D (25%,12.5% and 6.25% respectively) were present only in pSLE. aSLE had higher EBV load compared to pSLE (p=0.045). IgG to p22 and EA-D were associated with DRB1*03 in aSLE (OR=3.92 and 5.28 respectively) and IgG to VCAp125, VCAp19, EBNA-1, p22 and EA-D were associated with DRB1*15 in pSLE (OR=4.0,3.4,4.6,4.8 and 4.8 respectively).

Conclusions DRB1*15 and DRB1*03 are risk alleles in North Indian SLE. Both show strong associations with immune response to EBV proteins. pSLE has stronger association with DRB1*15, which is associated with early infection, stronger immune response to EBV proteins and higher EB viral load, which may explain more severity of pSLE.

Background and aims To investigate whether over-expression of miRNA125a has an effect on organic injuries and its potential mechanisms by using miRNA-125a-agomir transfected MRL/lpr mouse.

Methods 5-week-old female MRL/lpr and MRL/n mice were divided into three groups: the lpr-miRNA-group, given miRNA-125a-agomir intravenously; the lpr-PBS-group, given PBS intravenously; MRL-control-group: receiving no treatment. Blood samples and urine were collected weekly interval from 5-week-age. At 13-week-age and 17-week-age, bronchoalveolar lavage fluid, blood sample, lung and spleen tissues were collected and analysed in half of the mice.

Results MiRNA-125a levels in splenocytes were significantly elevated in MRL/lpr mice. A variety of inflammatory cell infiltration, mostly T cells, in lung tissues was statistically alleviated in lpr-miRNA group. The proportion of splenic plasma cells in lpr-miRNA group were statistically reduced. The serum level of anti-dsDNA and the high tilter proportions of ANA were much lower in lpr-miRNA group than in lpr-PBS group. Cytokines analysis showed serum levels of RANTES in lpr-miRNA group were statistically reduced. The serum level of anti-dsDNA and the high tilter proportions of ANA were much lower in lpr-miRNA group than in lpr-PBS group.

Conclusions Intravenous injection of miRNA125a-agomir +Engreen in vivo transfection reagent mixture solution could transfected miRNA-125a and increase the level of miRNA-125a expression safely and effectively. Over-expression of miRNA-125a could alleviate inflammatory cell infiltration in lung tissues in lpr mouse and reduce the proportion of splenic plasma cell. Elevation of miRNA-125a expression could inhibit the expression of RANTES in lpr mice, which in turn reduce the autoimmune inflammation to a certain extent.