

July 05-07, 2018
Vienna, AustriaHaiyan Xu et al., Insights Allergy Asthma Bronchitis 2018, Volume: 4
DOI: 10.21767/2471-304X-C1-002

IMMUNOSUPPRESSIVE EFFECT OF TOLEROGENTIC DENDRITIC CELLS ON MICE SKIN ALLOGRAFT PULSED BY LIVER X RECEPTOR AGONIST AND THE POTENTIAL MECHANISM

Haiyan Xu, Xiaozhou He, Renfang Xu, Hao Lu, Xuyi Ma and Dong Xue
Third Affiliated Hospital of Soochow University, China

In the previous studies, we found that dendritic cells induced from mice bone marrow cells pulsed by liver X receptor agonist (T0901317) showed tolerogenic characteristics. To further investigate the suppressive effect of T-tDCs, mice skin transplantation model was applied. T-tDCs were tested by flow cytometric assay and mixed lymphocyte reaction. Then T-tDCs were stained by CM-DiL and injected into mice by caudal vein. At day -1, -3, -5, -7, peripheral blood, spleens, lymph nodes, kidneys, livers and skin were collected for observing the distribution of T-tDCs. C57BL/6 mice were recipients, BALB/c mice were donors and mice flap transplantation model were established. Total 5 groups were set up, high dose treated group (CM-DiL-tDC, 5×10^7 , HD-group), median treated group (1×10^7 , MD-group), low dose treated group (2×10^6 , LD-group), CsA-group, and PS-group, respectively and 6 mice were in each group. The corresponding concentration of CM-DiL-tDC cells was injected to mice by caudal vein at day-1 and day-8 after transplantation of three different dose treated groups. The status of allograft rejection was evaluated at day-8, -9, -11, and -14 of one mouse in each group. At day-14, all mice were sacrificed. Blood sampling, serum, spleens, skin flap grafts, livers, kidneys and axillary and inguinal lymph nodes were all collected for detection. TGF- β 1 and IL-10 in tissues were detected by IHC; CD4 and FoxP3 expression in tissues were detected by confocal. Results indicated that, CM-DiL-tDC could be found at day -5,-7 in PB, every day in spleens and livers, only day-5 in lymph nodes, day-3,-5,-7 in skins, and no detection in kidney. Compared with PS-group, rejection scores at day-9,-11 and -13 in CsA group, rejection score of HD-group significantly decreased ($P < 0.05$), respectively. And TGF- β 1 expression in CsA-group, HD-group and LD-group significantly increased, compared with PS-group ($P < 0.05$, $P < 0.01$, respectively); IL-10 expression in CsA-group, HD-group, MD-group and LD-group all significantly increased, compared with PS-group (all $P < 0.01$), and IL-10 expression in HD-group even much higher than that in CsA group. Much more CD4+ FoxP3+ cells were found in skin allograft tissues of HD-group at day-9, -11 and -13 after transplantation. It could be concluded that local production of TGF- β 1 and IL-10, and the induction of Tregs should be the fundamental way of T-tDC during its suppressive function.

Biography

Haiyan Xu has devoted herself on relative study of kidney transplantation, including rejection, opportunistic viral infection and induction of immune tolerance, since she got PhD. Taking B cell activating factor (BAFF) as the research breakthrough point, she found BAFF signalling system involve in the progression of renal allograft rejection and blockade of BAFF signalling should become the potential anti-rejection options; BAFF signalling crosstalk with HCMV/TLR9 in renal transplant recipients, which would decrease the long-term outcome of renal allograft, and mouse DC induced by liver X receptor agonist show immunosuppressive effect, which differ from natural tolerance DC.

xuhaiyan09@163.com