

BLADDER INSTILLATION THERAPY OF ADIPOSE DRIVEN STEM CELLS AND THE ADDITION OF MANNANOSE IN A RAT CYSTITIS MODEL- MULTIPLE SUPPRESSIVE EFFECTS FOR EXCESS CYTOKINES

Hypothesis / aims of study

adipose driven stem cell(ASCS) is used as a clinical regeneration therapeutic agent for various organs. We examined the healing effects of intravesical ASCS on damaged urothelium in a rat model of chemically induced cystitis.

Study design, materials and methods

Rat(r) and human(h)-ASCS instillation in the bladder of female Sprague Dawley® and nude rats to cyclophosphamide induce cystitis respectively. After 24 hour r-ASCS(n=6), r and h ASCS with mannose(MN) (n=6), vehicle(n=6) were administered in the bladder for 48 hour. Histopathology, urothelial permeability, cystometrogram and nociceptive behaviors were evaluated on day 2. Bladder inflammation were evaluated the cytokines of bladder urine and tissue measured by multiplex system and urine myeloperoxidase(MPO) measured by ELISA.

Results

MN increased cell activity of ASCS in vitro. Bladder histological evaluation revealed polymorphological inflammatory cell infiltration and increase in inflammatory and protect of damaged urothelium and cytokines in urine and the tissue and MPO in urine. h-ASCS and h-ASCS with MN were homing in interstitialis of bladder of nude rats. Evans blue over absorption in the bladder wall were decreased in ASCS and ASCS with MN treated rats. Cystometrogram demonstrated that the intercontraction interval were shorter in ASCS and ASCS with MN treated rats furthermore.

Interpretation of results

These findings, which were associated with urothelial injury and increased permeability,.

Concluding message

ASCS and ASCS with MN accelerated via multiple cytokines suppressive effects for excess cytokines the repair of damaged urothelium, protected urothelial barrier function and suppressed bladder overactivity and nociception respectively.

Disclosures

Funding: none **Clinical Trial:** No **Subjects:** ANIMAL **Species:** Rat **Ethics Committee:** the Regulations for Animal Experiments at the Nagoya University Graduate School of Medicine