

## 알파리포익 산이 chlorhexidine gluconate로 유도된 쥐의 복막 섬유화를 줄인다

경상대학교병원 의생명 연구소

김진현, 장세호, 박동준

### Alpha-lipoic Acid Attenuates Peritoneal Fibrosis Induced by Chlorhexidine Gluconate in Mice

Jin Hyun Kim, Se-Ho Chang, Dong Jun Park

Clinical Research Institute, Department of Internal Medicine, Gyeongsang National University Hospital

**Objectives:** Peritoneal fibrosis remains a serious complication of long-term PD leading to the failure of peritoneal function. We examined whether intraperitoneal injection of alpha-lipoic acid (ALA) could ameliorate chlorhexidine gluconate (CG)-induced peritoneal fibrosis in mice model.

**Methods:** An injection of 0.1% CG in 15% ethanol dissolved in 2 ml of saline was intraperitoneally given to mice every 3 days. 15% ethanol dissolved in 2 mL of saline was injected as a control. 150 mg/kg of ALA was also intraperitoneally injected to mice every 3 days. C57BL/6 mice were sacrificed at 21 days after CG injection.

**Results:** CG injection induced thickening of the submesothelial compact zone and cellularity of this zone increased compared to ALA alone. Thickening of the submesothelial compact zone and the cell density of collagenous compact zone was significantly suppressed in mice treated with ALA compared with CG mice given saline vehicle. The accumulation of CD68 and F4/80-positive cells was observed in the submesothelial zone in CG-injected mice. ALA inhibited the infiltration of CD68 and F4/80-positive cells compared with that in mice receiving CG alone. Collagen I was well expressed in lower layer of the submesothelial zone and this expression was significantly decreased in CG mice with ALA treatment. Immunoreactivity for TGF- $\beta$ 1 was shown in the submesothelial zone and this expression was significantly decreased in CG mice with ALA treatment. The peritoneal expression of  $\alpha$ -SMA was found in the upper layer of the submesothelial compact zone, as well as vascular smooth muscle cells in CG mice. ALA treatment reduced density for  $\alpha$ -SMA-positive signals. The pSmad-positive cells were also expressed in the submesothelial zone in CG-injected mice and these cells were suppressed in CG mice with ALA treatment.

**Conclusions:** This result provides that ALA might have a therapeutic potential for treatment of peritoneal fibrosis

**Key Words:** 복막염, 복막투석, 알파리포익산  
Peritonitis, Peritoneal dialysis, Alpha-lipoic acid