

중탄산염 함유 복막투석액이 장막에서 유래된 중피세포의 상피간엽전이에 미치는 영향

영남대학병원 내과

조규향, 도준영, 서준혁, 최은우, 황문주, 강석희, 박종원, 윤경우, 석윤미, 신계림, 손현자, 이수정

The Effect of Bicarbonate Containing Peritoneal Dialysis Solution on Epithelial-to Mesenchymal Transition in Omentum-derived Mesothelial Cells

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Background: The purpose of this study is to investigate the effect of bicarbonate containing PD (peritoneal dialysis) solution on EMT (epithelial-to mesenchymal transition) in omentum-derived mesothelial cells.

Methods: Omentum-derived mesothelial cells from 20 nonuremic patients undergoing abdominal surgery were incubated with lactate-buffered standard PD solutions (L group; Dianeal[®] and Stay-safe[®]), bicarbonate/lactate buffered PD solutions (LB group; Physioneal[®] and Balance[®]) or bicarbonate buffered PD solution (B group; BicaVera[®]) diluted 1:1 with culture medium. E-cadherin was measured as standard mesothelial marker by quantitative RT-PCR (real time-polymerase chain reaction) analysis. Snail and alpha-SMA (alpha-smooth muscle actin) were also measured as fibroblast marker by quantitative RT-PCR analysis. The number of CD54 (cluster of differentiation 54) positive cells (indicative mesothelial cells) was counted among confluent omentum-derived mesothelial cells by FACS (fluorescence-activated cell sorter).

Results: There were no significant differences in level of E-cadherin, snail and alpha-SMA among three groups. The number of CD54 positive cells among confluent omentum-derived mesothelial cells was B group, BL group and L group in order but the difference did not reach the statistical significance.

Conclusions: Bicarbonate containing PD solution groups showed a trend of higher number of CD54 positive cells among confluent omentum-derived mesothelial cells in vitro but without significant statistical differences in this study. We need further studies to clarify the impact of bicarbonate containing peritoneal dialysis solution on EMT in mesothelial cells.

Key Words: 상피간엽전이, 복막투석액, 장막
EMT, Peritoneal dialysis solution, Omentum