

## Icodextrin이 lipopolysaccharide에 의해 유도된 복막중피세포의 상피 중간엽전이에 미치는 영향

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### Role of Non-glucose Based Solution in Lipopolysaccharide (LPS)-Induced Epithelial Mesenchymal Transformation (EMT) in Mesothelial Cell

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**Background:** Peritoneal fibrosis is one of the most common complications of peritonitis which often leads to a change in peritoneal characteristics. High glucose conditions are known to be associated with poor outcome in infection. Therefore, It is assumed that the glucose based peritoneal dialysis (PD) solution itself could aggravate the complications of peritonitis. Recently, non-glucose PD solutions have been proved to improve metabolic derangements and has been shown to preserve residual renal functions better than glucose based solutions. However, it is not clear whether non glucose solutions have a protective role against peritoneal fibrosis after peritonitis in CAPD patients.

**Objective:** The aim of this study was to evaluate the effect of high glucose or non-glucose based PD solution on lipo-polysaccharide (LPS) induced human peritoneal mesothelial cell epithelial-mesenchymal transformation (EMT).

**Methods:** Human peritoneal mesothelial cells were isolated from a piece of human omentum and were exposed to 5.6 mmol/L glucose (NG), NG+1.5% and 4.25% Dianeal, or Extraneal PD solution with or without 2 ug/L LPS. E-cadherin/ $\alpha$ -SMA and fibronectin mRNA and protein were determined by real-time PCR and western blot.

**Results:**  $\alpha$ SMA and fibronectin mRNA and protein expression were significantly increased in LPS-treated group compared to NG group. E-cadherin mRNA and protein expression were significantly decreased in LPS group compared to NG group.  $\alpha$ SMA/E-cadherin mRNA and protein expression ratio was higher in the group treated with 4.25% Dianeal+LPS compared with LPS only treated group. These high glucose associated changes were significantly lower in Extraneal+LPS group when compared to 4.25% Dianeal+LPS group. EMT associated markers were similar between 1.5%+LPS group and Extraneal+LPS group. Morphological changes of EMT were seen in LPS+NG group and these were more prominent in 4.25%+LPS group compared to 1.5%+LPS or Extraneal+LPS groups.

**Conclusion:** This study suggests that non-glucose based PD solution may be beneficial to prevent EMT in acute peritoneal inflammatory state such as CAPD peritonitis.

**Key Words:** 복막투석, 복막염, 중간엽전이  
Peritoneal dialysis, Peritonitis, EMT