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THE EFFECT OF POLYMER-SURFACTANT ON ACUTE LUNG INJURY INDUCED BY E.COLI IN VENTILATED RATS

X. Gan, H. Li, L. Guo, L. Sun, C. Sun, G. Song

Capital Institute of Pediatrics, Beijing, China

Objective: The study was to observe the effect of polymer-PS (Curosurf)mixtures on acute lung injury rats with E.coli.

Methods: Adult rats given 3ml/kg 3x109CFU/ml E.coli by tracheal , were mechanically ventilated after infection for 24~36h. Fifteen minutes later, the animals with ALI (PaO2 < 20.kPa) were randomly divided into six treatment groups by transtrachea instillation (1) NS group (2) PS group (3) PS+NS group (4) PS+ PEG group (5) PS+ Dextran group (6) PS+ HA group . The blood gas analysis were measured in the pre-or post-treatment during 180 min. At the end, MIP-2 in the right lung lavage fluid were performed.

Result: At 180 min post-treatment, PaO2 of all PS or PS-polymer treatment groups increased compared with pre-treatment , but they were less than normal control group ($p< 0.01$), PaO2 of PS, PS+ Dextran, PS+HA group were singnificantly more than that of the NS group ($p< 0.01$ or 0.05) respectively. MIP-2 of lung lavage fluid in all treatment groups were higher than that of normal group ($p< 0.01$ or 0.05). MIP-2 of PS , PS+PEG , PS+ Dextran, PS+ HA group were less than that of NS group ($p< 0.01$) respectively except PS+NS group.

Conclusions: The data suggest that PS, PS+Dextran and PS+HA improved oxygenation function in ventilated rats with ALI induced by E.Coli. and the PS-polymer mixtures seemed more effective in inhibiting MIP-2 than PS in the same dose. Further preclinical studies are required.