Abstract

Objective: Prostacyclin (PGI2) has been shown to inhibit the expression of pro-inflammatory and pro-fibrotic mediators in pulmonary fibrosis. In this study, we aimed to test the preventive effects of intraperitoneally administered iloprost, a stable PGI2 analog, on bleomycin-induced pulmonary fibrosis in rats and to compare the effects of iloprost with the effects of methylprednisolone, a traditional therapy. Methods: Rats were randomly allocated into four groups: 1. Saline alone (n = 6); 2. Bleomycin + placebo (n = 7); 3. Bleomycin + methyl-prednisolone (n = 7); 4. Bleomycin + iloprost (n = 7). Fibrotic changes in the lungs were demonstrated by analyzing the cellular composition of bronchoalveolar lavage fluid, histological evaluation and lung hydroxyproline content. Results: Fibrosis was made in the lungs of rats by bleomycin experimentally. Fibrosis scores in the methyl-prednisolone and the iloprost groups were significantly lower than in the placebo group (p < 0.05). Furthermore, the score of the iloprost group was significantly lower than the score of the methyl-prednisolone group. The hydroxyproline content was significantly less in the methyl-prednisolone and the iloprost groups (p < 0.05). In the placebo group, the neutrophil percentage in bronchoalveolar lavage was significantly higher than in the other groups, whereas the macrophage percentage in placebo group was significantly lower (p < 0.05). Conclusion: Iloprost has protective effect on the pulmonary fibrosis induced by bleomycin and it may be more effective in decreasing fibrotic changes than methyl-prednisolone.

Keywords

Pulmonary fibrosis, Bleomycin, Iloprost, Methyl-prednisolone, Rats.