MATRIX METALLOPROTEINASE PROFILE IN BRONCHOALVEOLAR LAVAGE FLUID IN POST-TRANSPLANT OBLITERATIVE BRONCHIOLITIS

Havryk AP[1], R Jauw[1], A Azzola[1], P. Chhajed[2], PJ Johnson[1], AR Glanville[2], M Roth[1], JL Black[1]

Department of Pharmacology, Institute of Respiratory Medicine, University of Sydney, NSW 2006, Australia[1]. St Vincent's Hospital, Sydney, Australia[2]

Bronchiolitis Obliterans Syndrome (BOS) is an irreversible heterogeneous fibrotic disease which is a major complication affecting long term survival of lung transplant recipients. We postulate that an alteration of matrix metalloproteinases (MMPs) contributes to a non-degradative lung microenvironment allowing the accumulation of excess fibrous tissue. Methods: The gelatinolytic activity of bronchoalveolar lavage fluid (BAL) from five lung transplant recipients with BOS grade 3 was compared with five matched control (BOS grade 0) lung transplant recipients using zymography. Results: The contribution of total gelatinolytic activity attributable to MMP-2 was reduced in patients with BOS compared with controls (0.08 vs 0.34, $p<0.05$). In addition there was a trend to reduced MMP-2 activity compared to MMP-9 (82kDa+92kDa) activity (0.09 vs 0.36, $p=0.07$) and ratio of MMP-2 versus MMP-9+lipocalin associated MMP-9 (121kDa) activity (0.15 vs 0.61, $p=0.06$). MMP-9 activity and activation was not significantly different between the two groups. Conclusions: These data suggest that fibrous tissue accumulation in Bronchiolitis Obliterans Syndrome post lung transplantation is associated with reduced gelatinolytic activity due to with MMP-2.

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