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recognizes a different epitope and has a different reactivity to KS from 1/20/5D4 antibody, the correlation between the values measured by two antibodies suggest the measurement and com-

parison of these KS concentrations would be valuable in monitoring the catabolism of articular cartilage and the degree of synovial function injury.

Study on lung injury related to neutrophils induced by subcutaneous administration of large doses of chitosan in dogs

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Subcutaneous administration of large doses of chitosan causes fatal acute hemorrhagic pneumonia in dogs. This chitosan-inducing hemorrhagic pneumonia activity in dogs is reported to be pathophysiologically similar to acute respiratory distress syndrome (ARDS) in humans, but the mechanism of this response remains to be clarified. The purpose of this study was to investigate the role of neutrophils sequestered in the lung from this response in dogs, in which the changes in levels of several components of the bronchoalveolar lavage fluid (BALF) were examined. It was also evaluated whether the level of interleukin (IL)-8, the cytokine playing an important role in the pathogenesis of ARDS, was involved in this response using rat model as a substitute for dogs.

Before administration of chitosan, BALF was collected from each dog under general anesthesia. After 6 days, each dog was administered with 200mg/kg chitosan by subcutaneous injection. Physical and blood examinations were performed over 24 hours. After that, BALF was collected from each dog in the same way. Concentrations of lipid peroxide (LPO) and total protein (TP), activities of myeloperoxidase (MPO) and neutrophil elastase, and the production of nitric oxide (NO) in the BALF were

measured and compared with those in the pre-administration BALF. After BAL, pathological examination was performed and concentrations of LPO in the lungs, livers, and kidneys were measured in comparison with normal dogs. Subcutaneous administration of chitosan on rats was also done and then the IL-8 levels in serum were assayed.

After chitosan administration, the concentrations of LPO and TP, and the activities of MPO and neutrophil elastase in the BALF increased in all dogs. Increase of neutrophil and eosinophil numbers in the BALF was observed. The change of NO production in the BALF was not found. IL-8 level in the serum of rats increased after chitosan administration, the highest was 9 hours after administration. However a response similar to that in dogs was not observed.

The pathogenesis of the increase in the concentrations of LPO and TP, and the activities of MPO and neutrophil elastase in the BALF after chitosan administration in dogs may be due to the activation of neutrophils in lungs similar to ARDS. Subcutaneous administration of chitosan in rats did not cause lung injury as in dogs, but high levels of IL-8 were observed. Similar change in the level of IL-8 may also be caused after chitosan injection in dogs.