Pathophysiology of Bronchial Asthma, with Special Reference to the Quantitative Observation of the Regional Distribution of Pulmonary Arterial Blood Flow During Asthmatic Attack and Attack-Free Interval

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Twenty-five asthmatic patients were examined for regional pulmonary blood flow during asthmatic attack and attack-free period. The quantitative regional blood flow was examined by using a scinticamera with a computer data analysis system. The relationship between regional blood flow and lung function was examined with arterial blood-gas tensions, and following results were obtained.

1. The reversible phenomenon of decreased regional blood flow during asthmatic attack and its increase during the attack-free interval was observed. Patients with intractable asthma showed an intence decrease in regional blood flow during asthmatic attack and the decrease was also marked during the attack-free interval, suggesting the presence of organic changes in the bronchopulmonary system. In general, there was a significant correlation between the severity of attack and the decrease of regional pulmonary arterial blood flow.

2. There was decrease of regional blood flow in cases with $FEV_{1.0}$ under 1000ml, RR over 4.1 $cmH_2O/1/sec$. With respect to the blood-gas tension, the cases with PaO_2 below 80 mmHg showed a decrease in regional blood flow but there was no distinct correlation between the decrease of regional blood flow with $PaCO_2$ and HCO_3^-.

Lung Perfusion and Ventilatory Changes after Unilateral Bronchography

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The purpose of the present study is to investigate how unilateral bronchography affects pulmonary perfusion and ventilatory function.

Eleven patients with various chest diseases were studied; six with right and five with left bronchography. Fifteen to 20ml of 60% uroklin was instilled into the bronchi of a