Therapy: Inhalation

Respiration 1970;27(Suppl. 1):197-198

Contribution to the Paper of Dr. R. Ferlinz, Bonn

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In continuing mass-spectrometric expiration-gas analysis after histamine-provocation and orxiprenaline-dilation [Trendelenburg, F., Respiration, Suppl. ad. 26:163 (1969)] in some of patients we found paradoxical reactions. Marked groups of patients showed improvement of ventilation-inequalities instead of histamine-constriction and worsening of ventilation-inequalities instead of orciprenaline-dilation.

Figure 1 shows one case as an example of these findings. Synchronous Argon-curves showed generally consistent results, therefore these CO₂-curves may be interpreted mainly as ventilation disturbances. The radius of the smallest constructible circle, and with it the ascension-rate of mixed air portion of expiration-curves, may increase or remain unchanged in these

FEV₁:3600 2700 4300

Hist.₁O₂μg Alupent

Fig. 1

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r₂₁

14–20

10–13

≤9

12,7% 48%

30,8% 8,5%

r

pAC₀₂

*

63,1%

idem_.

–³/₈–

¹/₃%_ _

N¹/₈

18,6%

18,6% 24,4% _
 57%
 s
 51,5%
 19,3% , 29,2%

leer mm

teei·-»·Hist. Hist.-»Alup· leer-»·Alup· Fig. 2

cases in spite of histamine constriction (FEV_i, Flow-resistance). In contrast, after marked broncho-dilation by orciprenaline, in some cases ventilation unevennesses did not improve or even worsen. The left column shows (lower part) the group of patients with normal circle-radius (up to 9 mm). The middle and upper parts of this column show 3 groups of patients with moderate and severe ventilation-perfusion inequalities. The left perpendicular shows, after histamine-obstruction in the upper part, the expected increase in ventilation-disturbances and circle-radius. But in the middle and lower part are important groups of unchanged or even improved inequalities. Of still more interest are patients after orciprenaline-dilation. The middle perpendicular (ventilation disturbances after orciprenaline-dilation compared with histamine-constriction) shows in the middle (24.4 %) and the upper portions (18.6 %) important groups of patients with unchanged or worsened ventilation-perfusion disturbances in spite of bronchodilation. The right perpendicular shows similar groups of patients (19.3 % and 51.5 %) in orciprenaline-dilation compared with pre-inhalation state.