Long-Term Oxygen Therapy

Is It Necessary to Increase the Nocturnal Flow by 1 Liter?

To the Editor:

The American Thoracic Society suggests that in long-term oxygen therapy (LTOT), the nocturnal oxygen flow should be increased in 1 L/min above the daytime administered rate. Our aim was to evaluate the need for such an increase in all COPD patients receiving LTOT.

We studied 34 patients (FEV₁ = 0.78 ± 0.26 L) who qualified for LTOT. In addition to measuring blood gas values (ABL-3 Radiometer, Copenhagen) while breathing room air, oxyhemoglobin saturation (SaO₂) was registered (Oxipulse Radiometer, Copenhagen), with hypoxia at the prescribed flow, both with the patient awake and at rest for 2 h, and throughout the night. The data were analyzed with the Student’s t test for paired and unpaired series.

In the first stage of our study, we observed that 29 of the patients, in spite of not receiving an increase in oxygen flow, the time they spent with SaO₂ between 90 and 80 percent was only 19.7 ± 0.4 min and at no point had a percentage of SaO₂ lower than 80 percent. In this group of patients, there was no difference between mean SaO₂ while awake (94.0 ± 1.6%) and while asleep (93.1 ± 1.4%). The remaining five patients spent 151.1 ± 95.7 min with SaO₂ between 90 and 80 percent, and 25.5 ± 22.1 min with SaO₂ between 80 and 70 percent. In this group of patients, nighttime SaO₂ (84.2 ± 2.8%) was lower (p<0.001) than daytime SaO₂ (92.9 ± 1.7%). In addition, there were significant differences between the two groups of patients in mean SaO₂, both in the night (p<0.001) and in the day (p<0.001).

In the following stage of the study, the five-patient group received an increase of only 0.5 L/min in nocturnal oxygen flow, which was also maintained throughout the day, and their new SaO₂ was at no point lower than 90 percent. The mean SaO₂ of these patients in the night increased to 91.8 ± 1.5%, which was not significantly different from their new daytime value of 93.8 ± 1.5%. The previous differences in SaO₂ between the two groups similarly disappeared.

When we searched for clinical or functional differences between both groups, we observed no differences in FEV₁ and FVC, course of their illness, degree of dyspnea, h/d of LTOT, and time since LTOT prescription. Differences were found with the patients awake while breathing room air in PaO₂ (53.2 ± 6 mm Hg and 46.1 ± 5.4 mm Hg) (p<0.05), PaCO₂ (46.8 ± 6.7 mm Hg and 55.6 ± 10.3 mm Hg) (p<0.05), and SaO₂ (87.5 ± 3.9% and 81.0 ± 5.3%) (p<0.01).

Given the lack of data available in the literature and the fact that none of our patients, including the most hypoxic, required a 1-L nocturnal increase in O₂ flow, we suggest that a revision of the recommendation of the American Thoracic Society may be suitable.

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Lipoid Pneumonia Due to Intranasal Application of Petroleum Jelly
An Old Problem Revisited

To the Editor:

Brown and colleagues recently reported a case of lipoid pneumonia caused by intranasal application of petroleum jelly and stated that they were not aware of any previous reports of such occurrence. This brought back memories of a patient I had treated in 1975 and reported about in the Annals of Internal Medicine.

My patient, a 75-year-old man, had a thoracotomy for a suspected lung carcinoma and the surgeon resected an "oily

REFERENCE

1. Torén K, Brisman J, Järvelom B. Asthma and asthma-like symptoms in adults assessed by questionnaires: a literature review. Chest 1993; 104:600-08

REFERENCES

1 American Thoracic Society. Standards for the diagnosis and care of patients with chronic obstructive pulmonary disease (COPD) and asthma. Am Rev Respir Dis 1987; 136:225-44

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