To the Editor:

The study of the effects of noninvasive positive pressure ventilation to reduce chronic compensated CO₂ retention in COPD patients ignores the possible adaptive advantage of “resetting” the PCO₂ to a higher level than normal. As experts in the mechanics of COPD have argued in the past, chronic compensated CO₂ retention will allow for CO₂ homeostasis at a lower level of alveolar, and thus minute, ventilation. This may result in decreased dyspnea during exercise. Some time ago, we reported on a group of patients with very advanced COPD and quite high PCO₂ levels, ranging from 75 to 110 mm Hg (mean, 90 mm Hg) with partial bicarbonate compensation: mean HCO₃⁻ of 45 mEq/L and pH 7.32. Of course, these patients also received long-term nasal oxygen. All were functional to a remarkable degree in view of severe airflow obstruction: mean FEV₁, 0.41 L (range, 0.31 to 0.67 L). One patient worked daily as a road inspector! Mean survival was 17 months. I have also had many patients gain remarkable relief from dyspnea while receiving oxygen and exercise during pulmonary rehabilitation. It is as if their brain adjusts to the work of breathing by “living” at a high but compensated PCO₂. Thus, in my view, we should not focus on just one physiologic manifestation of COPD, and we must sometimes be reminded about the wisdom of nature.

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REFERENCES


To the Editor:

We are grateful for the comments of Dr. Petty regarding our article in CHEST (August 2005) dealing with noninvasive positive-pressure ventilation (NPPV) treatment in stable patients with hypercapnic COPD. We agree with the statement that chronic compensated CO₂ retention reflects an adjustment mechanism that will allow for CO₂ homeostasis at a lower level of minute ventilation, thus resulting in decreased dyspnea, particularly if long-term oxygen therapy (LTOT) is applied. We also agree that this compensatory mechanism reflects the wisdom of nature. Nevertheless, chronic hypercapnia indicates long-term failing of the respiratory pump. Accordingly, COPD patients with higher PaCO₂ levels have a lower ventilatory reserve, and this has been suggested to be a limiting factor both during daily living and particularly during exacerbation.

Recently, we have shown that controlled nocturnal NPPV therapy is capable of increasing tidal and minute ventilation during the 3 subsequent hours of nighttime spontaneous breathing and of sustaining increased tidal and minute ventilation until reconnection to the ventilator in the evening. Here, augmented alveolar ventilation caused a decrease of PaCO₂ followed by respiratory alkalosis that allowed renal elimination of elevated bicarbonate levels. This indicates reversion of the adjustment mechanism of chronic hypercapnia and may provide beneficial clinical effects in the addition to the positive effects gained by LTOT. Accordingly, health-related quality of life (HRQL) was reported to be higher in stable patients with hypercapnic COPD to whom NPPV leading to a decrease of PaCO₂ was administered in the addition to LTOT when compared to LTOT alone. Further, improvements of HRQL have been shown to be dependent on the ability of NPPV to lower bicarbonate levels following PaCO₂ reduction.

In stable patients with COPD, survival has yet not been shown to be improved when NPPV is applied in addition to LTOT compared to LTOT alone. However, studies that formed these results have used low ventilator settings that were not sufficient enough to increase alveolar ventilation and consecutively to decrease PaCO₂ values. As discussed in our article, NPPV using higher inspiratory pressures in a controlled mode is well-tolerated and capable of markedly improving hypercapnia in these patients. Survival rates were higher than previously reported. Since COPD is known to be one of the most important causes of chronic morbidity and mortality worldwide, we strongly think that the existing data regarding the potential benefits of NPPV that is aimed at more aggressively reducing PaCO₂ levels justify further controlled outcome studies.

In summary, COPD patients with chronic ventilatory failure metabolically and clinically adapt to chronic hypercapnia. LTOT further decreases dyspnea, increases PaO₂, and may thereby rest the exhausted respiratory pump, which could in part explain the improved prognosis. Moreover, NPPV aimed at a maximal reduction of PaCO₂ has been suggested to reverse this adjustment mechanism of chronically tolerated hypercapnia by augmentation of alveolar ventilation, thus decreasing PaCO₂ and bicarbonate levels. This has been suggested to provide additional clinical benefits regarding improvements of HRQL and prolongation of life, which need to be estimated in a more quantitative fashion following controlled trials.

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REFERENCES

Smoking in Movies

To the Editor:

Omidvari et al.1 evaluated a select group of films from the 1990s confirming earlier findings that the overall prevalence of smoking in films is similar to its prevalence in the overall population2 and highest in R-rated films.2–5 In contrast to data collected from the 1960s through 1980s, however, they found that major characters who smoke tend to be of lower socioeconomic class and villains. They also concluded that smoking is more likely to be present in independent films than in studio films.

In interpreting these findings, it is important to recognize that, in an effort to obtain an appropriate sample to compare smoking prevalence among major characters and in 1990s society, Omidvari et al.5 excluded any films and scenes set outside the United States, those set in earlier times, science fiction and fantasy films, and with smoking by non-US citizens. There is no evidence that viewers, particularly adolescents, make such distinctions about smoking.

To obtain their target sample size, Omidvari et al.5 collected data on R-rated films made from 1996 to 1998, but also on PG and PG-13 (youth-rated) films from the entire decade of the 1990s. Smoking in movies has shifted “down” from R-rated films to PG-13 in recent years,6 which could lead this sampling strategy to underestimate the prevalence of smoking in PG-13-rated films. The fact that Omidvari et al.5 excluded films such as Titanic, a film popular with youth featuring smoking by both its young stars, makes it all but impossible to extrapolate from statements about the nature and presence of smoking in the sample of films used to prepare this article.

Most important, the magnitude of exposure to on-screen smoking strongly predicts adolescent smoking, not its prevalence among major characters.6 Films from major studios, not independents, account for 90% of exposure to smoking in movies (Table 1, based on data in the study by Polansky and Glantz7) and deliver the most new adolescent smokers to the tobacco industry.5,7

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REFERENCES


To the Editor:

In reply to the letter of Glantz and Polansky about our article,1 we set out to study whether “smoking in contemporary American

Table 1—Tobacco Incidents and Impressions: Major Studios vs Independents (1999–2004)

<table>
<thead>
<tr>
<th>Studios</th>
<th>Tobacco Incidents*</th>
<th>Tobacco Impressions by Rating (millions)†</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
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<tr>
<td>Artisan‡</td>
<td>235</td>
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<tr>
<td>Disney‡</td>
<td>1,192</td>
<td>23</td>
</tr>
<tr>
<td>D’Works§</td>
<td>225</td>
<td>4</td>
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<tr>
<td>Small Indies¶</td>
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</tr>
<tr>
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<td>News Corp.</td>
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<tr>
<td>Sony</td>
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<td>18</td>
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<tr>
<td>Time Warner**</td>
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<td>Universal†</td>
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<tr>
<td>USA Films††</td>
<td>250</td>
<td>5</td>
</tr>
<tr>
<td>Viacom</td>
<td>500</td>
<td>9</td>
</tr>
</tbody>
</table>

Major studios       5,271 82 981 16,169 16,402 90
Independents        1,155 18 37 923 2,609 10

†One tobacco incident × one paid theatrical admission equals one tobacco impression. Admissions were calculated by domestic gross/average ticket price for year of release.
‡Acquired by fellow independent Lions Gate in 2003.
§Includes Miramax, acquired in 1994, and Dimension, the genre film label of Miramax.
¶An independent frequently distributing through major studios.
†Miscellaneous producers/distributors releasing < 10 features over the survey period.
**Includes New Line and Fine Line, acquired in 1996 with other Turner properties. Disney, Sony, and News Corp. also own “specialty” labels.
††Cable-allied independent merged into Universal in 2001.