Recruitment Maneuvers in ARDS ... More Questions Than Answers

To the Editor:

In an interesting article in CHEST (November 2007), Talmor and colleagues1 demonstrate that recruitment maneuvers are well tolerated in ARDS, with no major hemodynamic or immunologic evidence of deterioration within the first hour of a recruitment maneuver. However, certain aspects of this study are not clear from the article.

In this study, eight out of the 26 patients had intraabdominal pathologic results wherein the pressures applied during the study may not be appropriate, because higher airway pressures are required to generate an equivalent transpulmonary pressure in the patient with increased intraabdominal pressure.2 The use of bladder pressure measurements may help in determining the intraabdominal pressure and may help in this regard. Furthermore, stratifying the results into abdominal and extraabdominal categories may alter the results.

Gattinoni et al3 showed that patients with extrapulmonary ARDS (ARDSexp) have a greater response rate to recruitment maneuvers than those with pulmonary ARDS (ARDSp). Thus, patients with pneumonia may have a limited amount of recruitable lung tissue, and the higher pressure may overinflate normal lung tissue rather than aerating the consolidated tissue. So, further separating the results into ARDSP and ARDSexp may lead to greater insight in the study. A series by Gattinoni et al4 found that patients with ARDSP had a higher percentage of recruitable lung tissue than patients with ARDSexp when using CT scanning of the whole lung to quantify recruitment. Thus, CT scanning should ideally be performed when evaluating the effects of recruitment maneuvers. Finally, two (7.69%) out of 26 patients in this study did show a hemodynamic compromise and early termination of the recruitment maneuver, which definitely puts a question mark on the safety of this maneuver in critically ill patients with ARDS.

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References

Risk Factors for Isoniazid Hepatotoxicity in Children With Latent TB and TB: Difference From Adults

To the Editor:

Isoniazid (INH) is still the mainstay of the treatment of both active and latent TB. The main adverse effect of this worldwide-used drug was hepatotoxicity, which had a wide spectrum, changing from mild transient elevations1 in aminotransferases to severe hepatitis leading to liver transplantation.2 The incidence of INH hepatotoxicity was reported to range from 0.1% at the low end to from 4% to 8% at the high end in different studies. The studies concerning childhood TB and INH hepatotoxicity in children were limited and composed of reports in which children and adults were evaluated together.

We aimed to determine the overall incidence of severe and mild INH hepatotoxicity and the effect of age in children. Patients during the period from 2002 to January 2009 with the diagnosis of TB or latent infection were included. World Health Organization Toxicity Classification Standards were used for the evaluation of INH hepatotoxicity.3

Overall hepatotoxicity was observed in 12 patients (1.7%) of 695 patients, whereas 4 patients (0.57%) had moderate-to-severe hepatotoxicity (Table 1). There were no statistical differences in the incidence of overall hepatotoxicity, grade I to II hepatotoxicity, and grade III to IV hepatotoxicity when the patients with TB and latent TB were compared (P > 0.05). There was no statistical difference in the incidence of overall toxicity in age groups (aged < 5 years, 5-10 years, ≥ 10 years) (P > 0.05).

Table 1—Incidence of Hepatotoxicity

<table>
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<th>Grade</th>
<th>TB Cases, No. (%) (n = 78)</th>
<th>Latent TB Cases, No. (%) (n = 617)</th>
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<tbody>
<tr>
<td>Grade I-II</td>
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</tr>
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Older age was a risk factor for hepatotoxicity in adults, whereas smaller children were reported to be under risk in childhood. However, our study did not demonstrate any age-specific difference for hepatotoxicity.

In conclusion, severe hepatotoxicity in children was found to be lower than reported before, and age did not affect the incidence of INH hepatotoxicity, as it did in adults. Nevertheless, the potential of anti-TB drugs for hepatotoxicity and liver failure in children should be kept in mind.

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References

Use of Antisialogogues in Bronchoscopy

To the Editor:

In their recent article in CHEST (August 2009), Malik et al suggest that use of anticholinergic premedication may reduce airway secretions during bronchoscopy but not cough, patient discomfort, oxygen desaturation, or procedure time. However, a review of their data does not truly support a clinically important difference, even for secretion reduction.

We found the design of their study to be strikingly similar to our initial randomized, double-blind, placebo-controlled study of atropine and glycopyrrolate published in 2000 within this same journal (July 2000). The only real difference between our study and the Malik study published 9 years later was the total number of patients enrolled; in fact, the findings are nearly identical. We designed our initial study to have 80% statistical power (β) of detecting a 12% difference between the mean values recorded on a visual analog scale for the primary end point of control of respiratory tract secretions. This difference was estimated to be the minimum required to make the use of these medications clinically important. To achieve this level of power, approximately 210 patients were calculated to have been required for the study, 70 in each group. Although Malik and colleagues enrolled 1,000 consecutive patients who were eligible, they unfortunately did not report the level of statistical power to which they designed their study. If they did, one would likely see that the minimal difference in visual analog scale scores reported was barely statistically significant, and hardly clinically generalizable.

In summary, there is now a multitude of published data demonstrating that administration of antisecretory drugs prior to bronchoscopy does not reduce procedure times, does not result in clinically significant differences in cough or secretion control, and in some cases may actually result in clinical harm. Its routine use should be abandoned.

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References

Response

To the Editor:

We thank Dr Cowl for his interest in our article recently published in CHEST (August 2009). Anticholinergic premedication continues to be used during bronchoscopy at many centers despite no clear evidence of benefit and potential for harm. Therefore, we felt the need to more clearly investigate the role of such medication. Inevitably, our study had to have several similarities in design with some previous studies in this regard, including one by Cowl et al. However, as acknowledged by Dr Cowl, our study involved a larger number of patients from a different population, which increases the generalizability of conclusions on the subject matter. In addition, we investigated the differences in the main outcome measures after adjusting for potentially confounding variables, which was not done in the earlier studies.

Although, as pointed out by Dr Cowl, a prior power calculation was not performed in our study, this limitation would be unlikely to have affected the conclusions drawn from the study. We observed that in unadjusted comparisons there was a borderline-significant difference in the bronchoscopist-assessed airway secretions between patients receiving anticholinergic premedication and...