Communications to the editor

Communications for this section will be published as space and priorities permit. The comments should not exceed 350 words in length, with a maximum of five references; one figure or table can be printed. Exceptions may occur under particular circumstances. Contributions may include comments on articles published in this periodical, or they may be reports of unique educational character. Please include a cover letter with a complete list of authors (including full first and last names and highest degree), corresponding author’s address, phone number, fax number, and email address (if applicable). An electronic version of the communication should be included on a 3.5-inch diskette. Specific permission to publish should be cited in the cover letter or appended as a postscript. CHEST reserves the right to edit letters for length and clarity.

Why Not To Use Erythromycin in GI Motility

To the Editor:

In their excellent review of GI complications in patients receiving mechanical ventilation, Mutlu and colleagues discuss the beneficial effects of erythromycin at a daily dose of 200 mg, plus metoclopramide and cisapride on GI motility.

Even if GI hypomotility is a serious problem in patients admitted to the ICU, its clinical impact seems to be much less important than nosocomial infections of the respiratory tract, which may develop in up to 20% of patients who have received mechanical ventilation for a period >48 h.2

The use of erythromycin, at doses far below the concentrations necessary for an inhibitory effect on susceptible bacteria, provides close to ideal conditions for the induction of bacterial mutation and selection. Since there are at least two other effective nonantibiotic drugs to enhance GI motility, it seems reasonable to use one of these in the first line of treatment rather than erythromycin, which has prokinetic properties only as a side effect. To our knowledge, there is no study addressing the question of the resistance of fecal bacteria populations before and after the use of erythromycin at subinhibitory concentrations. However, emergence of bacteria increasingly resistant to macrolide antibiotics has recently been reported.3

In the absence of reliable data, the use of erythromycin just for its prokinetic effects should thus be avoided, and its prescription should be reserved for infections due to susceptible bacteria. Only an approach toward the use of erythromycin as reasonable as our approach toward other antibiotics may help to restrain the emergence of resistant populations.

J. M. Guerin, MD
F. Leibinger, MD
Hospital Lariboisière
Paris, France

Correspondence to: J. M. Guerin, MD, Hospital Lariboisière, 2 rue Ambroise Paré, 75010 Paris, France; e-mail jean-michael.guerin@hrb.ap-hop-paris.fr

REFERENCES


To the Editor:

Guerin and Leibinger raise an insightful point about the use of erythromycin for GI hypomotility in patients receiving mechanical ventilation. Sublethal concentrations of antibiotics exert selective pressure on bacteria and can contribute to the development of resistance.1,2 While concerns regarding the development of antimicrobial resistance are, in general, relevant, we are unaware, as Drs. Guerin and Leibinger have also pointed out, of any data to support the clinical relevance of this hypothesis regarding a short course of low-dose erythromycin.

GI hypomotility affects up to 50% of patients receiving mechanical ventilation, it is associated with significant complications (aspiration, esophagitis), and it impedes the delivery of enteral nutrition. Furthermore, hypomotility may contribute to overgrowth and translocation of bacteria across the bowel wall, which can be a cause of spontaneous bacterial peritonitis and a contributor to multimorbid organ system failure. Parenteral nutrition as an alternative for enteral route in intractable cases of GI hypomotility is associated with myriad complications (ie, catheter infections, deep venous thrombosis). Therefore, GI hypomotility is a significant problem that should be treated if possible. Unfortunately, treatment options are limited; cisapride is no longer available in North America, and metoclopramide does not always work. Thus, short-term use of low-dose erythromycin is a reasonable approach to promote GI motility.

Until new enterokinetic drugs such as 5-HT4 receptor agonists (ie, prucalopride)1,4 become available, and given the ramifications of hypomotility in critically ill patients, we believe that the benefits of a short-course treatment with once daily low-dose erythromycin for intractable GI hypomotility outweigh the unproven risk of erythromycin-induced bacterial resistance.

Gökhan M. Mutlu, MD
Phillip Factor, DO, FCCP
Northwestern University Medical School
Chicago, IL

Ece A. Mutlu, MD
Rush University Medical School
Chicago, IL

Correspondence to: Phillip Factor, DO, FCCP, Pulmonary and Critical Care Medicine, Evanston-Northwestern Healthcare, 2650 Ridge Ave, Evanston, IL 60201; e-mail: pfactor@northwestern.edu
Tumor Markers for Diagnosing Malignant Pleural Effusion?

To the Editor:

In the April 2001 issue of CHEST, Paganuzzi and colleagues analyzed two tumor markers (carcinoembryonic antigen [CEA], and CYFRA 21–1) in pleural fluid and concluded that elevated levels of these tumor markers suggest a diagnosis of malignant pleural effusion, and in patients with poor clinical conditions, diagnosis should be made on the basis of tumor markers alone. Can this conclusion be obtained from their results? I do not think so. In this series, CEA and CYFRA 21–1 sensitivity was 31% and 78%, respectively, and specificity was 91% and 80%. The possibility that a patient has a malignant pleural effusion if the tumor marker is “positive” depends on the pretest probability (prevalence). In that study, performed at least in part in a cancer center, the prevalence of malignancy was 68%. However, the prevalence in general hospitals is, by far, lower. For instance, in an epidemiologic study, the prevalence of effusions associated with malignancy was 24%, and in 273 consecutive patients studied by our group in a department of internal medicine, the prevalence was 33%. Because of the fact that in about half of the patients with malignant pleural effusion the first cytologic study finding is positive (consequently, tumor markers are not necessary), the true prevalence (effusions with a negative cytologic study finding) is still lower. In Table 1, the posttest probability of malignancy for several percentages of prevalence and for both tumor markers has been calculated. As can be observed, with a high prevalence the result should be considered somewhat suggestive but not diagnostic of malignancy (probability 77% for CEA, and 80% for CYFRA 21–1), and with the actual pretest probabilities in general clinical practice, the probability is purely by chance (for example, with prevalence 20% and a “positive” test finding, the probability of malignancy is 46% and 49%, respectively). Moreover, clinical data are, frequently, enough for suspecting malignancy, and in patients with pleural effusion of unknown cause malignancy is not frequent. Whether tumor markers are useful in this subgroup of patients (undiagnosed and without clinical suspicion of a malignant cause) needs to be demonstrated. In conclusion, tumor markers are not useful for diagnosing a malignant pleural effusion, and is a test necessary for suggesting malignancy when, in most cases, it is clinically easy to suspect?

Eduardo Garcia-Pachon, MD
Hospital Vega Baja
Orihuela-Alicante, Spain

Table 1—Probability of Malignant Pleural Effusion When the Tumor Marker Is Positive Depending on the Prevalence of Malignancy

<table>
<thead>
<tr>
<th>Tumor Marker, %</th>
<th>CEA</th>
<th>CYFRA 21–1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>77</td>
<td>80</td>
</tr>
<tr>
<td>40</td>
<td>69</td>
<td>72</td>
</tr>
<tr>
<td>30</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>20</td>
<td>46</td>
<td>49</td>
</tr>
<tr>
<td>15</td>
<td>38</td>
<td>41</td>
</tr>
</tbody>
</table>

*Cut-off values, sensitivity and specificity of CEA and CYFRA 21–1 reported by Paganuzzi et al. 1