appropriate supine positions for gastrointestinal laparoscopy, using 15° Trendelenburg and 10° reverse Trendelenburg positions at pneumoperitoneum pressures of 0, 15, and 25 mm Hg. From these measurements, discrete Fourier transformation was used to calculate lung and chest wall elastances and resistances. All measurements in the Trendelenburg position increased with 15 mm Hg pneumoperitoneum, and both lung and chest wall elastances increased further with pneumoperitoneum at 25 mm Hg (p<0.05). Although both lung and chest wall elastances and resistances increased in the reverse Trendelenburg position at 15 mm Hg pneumoperitoneum pressure, the increases in lung elas-
tance and resistance were less compared to measurements in the Trendelenburg position (p<0.05). The increases in lung elas-
tance and resistance at 15 mm Hg were positively correlated to body mass index or body weight; chest wall elastance and resistance increases were negatively correlated to the same factors (p<0.05). Intraoperatively, lung and chest wall mechanical impedances increase with increasing pneumoperitoneum pressures and are dependent on body configuration and position. These changes should be considered in patients with pulmonary disease or obesity because this increase in impedance may be critical.

To evaluate whether these large increases in lung and chest wall elastances and lung resistance were reversed or remained following release of pneumoperitoneum and completion of laparoscopy, another study3 compared respiratory mechanics immediately before the pneumoperitoneum and following deflation. Lung elastances and resistances after release of the pneumoperitoneum were not changed from baseline (p>0.05), although total respiratory elastance remained slightly increased compared with baseline (p<0.05). Thus, the reported compromise of respiratory function indicated by postoperative pulmonary function tests after laparoscopy does not appear to be due to changes in lung or chest wall passive mechanical properties. As more procedures are performed in patients with cardiopulmonary disease, the period of pneumoperitoneum with its concomitant respiratory mechanical changes will achieve greater importance.

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REFERENCES


Antibiotics in Acute Bronchitis and Exacerbations of Chronic Bronchitis
What Is General Practitioners’ Habit?

To the Editor:

The annual charge for antibiotics represents one of the heaviest pharmaceutical expenses for the Italian National Health Service (NHS), and the increasing use of new-generation, high-cost antibiotics is worsening the situation. Upper respiratory tract infections represent a high percentage of all ambulatory patient encounters with primary care physicians, and their treatment is the leading indication for use of antimicrobial agents.

We examined the outpatient management of acute bronchitis (AB) in previously fit persons and acute exacerbations of chronic bronchitis (AECB) by general practitioners (GPs), in order to evaluate their customary criteria for the use of antibiotics in these diseases.

An anonymous questionnaire was mailed to all GPs of the health district of Ferrara. The questionnaire consisted of two parts, the first concerning AB and the second AECB. The appropriate definitions, taken from the current literature, were given in the questionnaire. Four questions concerning the use of antibiotics and the type of antibiotic selected were common to both AB and AECB; two questions were structured as multiple-choice questions (Fig 1). A fifth question concerned AECB only. A daily cost of L3,600 (Italian) (about $2.20 US) was fixed as a cutoff for distinguishing low-cost and high-cost antibiotics. The low-cost group included amoxicillin, bacampicillin, amoxicillin plus clavulanic acid, erythromycin, mycycin, and co-trimoxazole.

One hundred eighteen of 184 GPs (64.1%), attending about 123,000 patients and observing about 8,200 cases of AB and 2,400 cases of AECB during the winter season, answered the questionnaire. As concerns AB, 20 physicians used antibiotics in all cases and 97 in selected cases, whereas one physician never used antibiotics. Penicillins and macrolides were considered first-choice antimicrobial agents by 80% of physicians. In 47.8% of cases, high-cost compounds were prescribed, and only 20 physicians (17%) indicated that low cost was among the factors influencing the choice of the drug.

As concerns AECB, 46.6% of the GPs prescribed antibiotics to all patients and 53.4% in selected cases. Quinolones and macrolides were the drugs most frequently used (59.3%), and high-cost antibiotics were used by a significantly higher percentage of physicians than in AB (72% vs 47.8%; p < 0.001). Only nine GPs considered price before choosing the type of antibiotic.

These results suggest that GPs prescribe antibiotics most frequently as a first-line treatment for patients with both AB and AECB. The tendency of GPs to prescribe antibiotics too quickly in AB has been previously reported by other authors,2 although such a tendency is not in keeping with the current literature, which supports the use of antibiotic treatment for AB only in selected cases.3 Conversely, patients with AECB are reported to get a significant benefit from antibiotic therapy, and such a benefit is greater in selected groups of patients.4,5

The overuse of antibiotics (in particular the high-cost agents) found in our survey is uselessly expensive and not justifiable from the clinical point of view. In our opinion, it is likely due to the imbalance between the propagandistic hammering of the pharmaceutical industry and the inert silence of the public health authorities, who fail to plan educational programs in pharmacoeconomics for physicians working in NHS (Italy).

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Reprint requests: Dr. Lucio Trevisani, via Brogi 1720, 44100 Ferrara, Italy
1) How many patients with acute bronchitis [acute exacerbation of chronic bronchitis] do you visit during the winter season?

2) Do you prescribe antibiotics for acute bronchitis [acute exacerbation of chronic bronchitis]?

- Never
- Yes, if the patient has fever
- Yes, if the patient has productive cough [purulent sputum]
- Yes, if other drugs are unsuccessful
- Yes, if symptoms are still present after 3-6 days
- Yes, if the patient has some risk factors (age or concomitant diseases)
- Yes, always

3) If you give antibiotics, what is your first-choice antibiotic and the duration of the treatment?

4) What is the reason(s) of your choice? (you can mark more than one answer)

- Broad-spectrum
- Good tolerance
- Low-cost
- Activity against bacteria most frequently involved in this disease
- Effectiveness in my clinical experience

5) What is your conduct when do you diagnose acute exacerbation of chronic bronchitis?

- I consult a pneumologist, without prescribing any therapy by myself
- I prescribe therapy by myself

**Figure 1.** Questionnaire mailed to GPs. The first four questions are common to both AB and AECB (differences concerning AECB are enclosed in square brackets). The fifth question concerns AECB only.

**References**


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