In fact, they declare that their work is "the first demonstration of the positive effect of the drug on respiratory exchanges." In one of the first publications on almitrine, in 1974, Neukirch et al. tested 72 obstructive, hypoxemic, and hypercapnic patients. Thirty-six served as control subjects and the other 36 were treated with 400 mg of almitrine. The authors had already underlined that the increase in PaO$_2$ after oral administration of almitrine is more sensitive and significant than the decrease in PaCO$_2$.

Since then, many works have been published by different groups showing the improvement in Pco$_2$ after administration of almitrine, which is often independent of ventilation. Several have used Wagner's technique to show this action. Others have used radioisotopic methods. Some other authors have shown that by maintaining ventilation at a constant level, almitrine administration improved oxygenation without changing the Pco$_2$. Thus, the action of almitrine on the V/AQ ratios is a well-documented phenomenon. The exact mechanism remains to be explained, but this, as Kipling once said, is another story.

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REFERENCES


To the Editor:

Dr. Sadoul's citation of Kipling is an adequate expression of our thoughts about his letter. But which story finally tells the truth?

Almitrine was introduced in France several years ago as a new respiratory analgesic devoid of central effects. It was soon shown to improve arterial blood gases in patients with COPD. Contrary to Dr. Sadoul's contention, Neukirch et al. never suggested that almitrine improved ventilation-perfusion matching. These authors attributed the improvement in arterial blood gases in their patients to an increase in ventilation.

Sengyels et al. were the first to observe that almitrine reduced arterial Pco$_2$ more than expected by its ventilatory effect, and suggested that the drug might improve ventilation-perfusion relationships. This observation and associated suggestion (not demonstration) was repeated by others. We suggested that the drug-induced improvement in ventilation-perfusion matching could be accounted for by an increase in pulmonary vascular tone. However, we did not go beyond our thoughts and kept in mind that the demonstration had still to be performed.

The effects of almitrine on ventilation-perfusion matching have been investigated using isotopic methods. Reference given by Dr. Sadoul is not really related to the subject. We suppose he meant another study by Rigaud et al. which showed an improved perfusion of the apexes of the lungs in patients with COPD after almitrine intake. In this work, the patients with the greatest response to the drug also significantly increased their ventilation. It has to be kept in mind that only isotopic methods can determine relative values for regional perfusion, ventilation and ventilation-perfusion ratios. They provide data which do not allow prediction of arterial blood gas levels from mixed venous. They cannot discriminate a change in arterial blood gases due to a modification in ventilation-perfusion matching from one due to a modification in overall ventilation.

This discrimination can be obtained by the multiple inert gas elimination technique. Casteing et al. performed such a study on patients with COPD treated with almitrine. Unfortunately, these authors presented data which do not support their conclusions. Almitrine induced a slight shift of blood flow distribution to the highest ventilation-perfusion ratios in their patients, but this is simply to be related to an increase in ventilation. The absence of shift of their ventilation distribution is probably due to a type II error because of small sample size. How the pulmonary vascular effect of almitrine escaped the measurements of Casteing's study remains a mystery to us.

Thus, we feel allowed to claim that our study (in Chest) is the first demonstration of the favorable effect of almitrine on ventilation-perfusion matching stricto sensu. Dr. Sadoul is obfuscating the meaning of words such as suggestion, demonstration, exhibition and comprehension. Like Alice to Humpty Dumpty, we may say to him: "The question is whether you can make words mean so many different things." More than Alice, we would be strongly dissatisfied by Humpty Dumpty's response. C. Mélot, M.D.; and R. Naeije, M.D., Ph.D., Medical ICU Laboratory, Saint-Pierre University Hospital, Brussels, Belgium.

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ECG Infusion Artifact

To the Editor:

Constant oscilloscopic display of electrocardiographic rhythm and rate is standard in the management of critically ill patients. A 48-year-old man admitted to our Special Care Unit to rule out myocardial infarction manifested an abnormal ECG rhythm while constant infusion of insulin was being administered utilizing an IVAC 230 drop counter (Fig 1). The abnormal rhythm was related solely to the infusion controller, as a standard bedside electrocardiogram revealed normal sinus rhythm (Fig 2).

Intravenous infusion pumps and controllers are fast becoming the most widely used electrically operated devices in the hospital environment. Functionally, most new infusion devices available today pose no hazard to the patient in almost all combinations of operating modes. A safety hazard that can be seen with infusion devices relates to a piezoelectric signal that can be generated by some devices when polyvinyl chloride tubing is suddenly compressed. In some patients with low electrocardiographic voltages and high skin resistance, this piezoelectric signal may either mimic or mask a host of possible cardiac events. The signal is manifested along with the electrocardiogram as a function of the pump or controlling mechanism, tubing parameters, infusion rate, and type of solution infused. This type of interference may sometimes be corrected by judicious skin preparation and repositioning of monitoring electrodes. Although the monitor used has a common mode rejection ratio ≥110 decibels, the piezoelectric potentials generated by the pinching of the IV tubing in the controlling mechanism still manifested themselves on the ECG tracing.

The abnormal rhythm strip manifested by this patient with high skin resistance is due purely to the infusion controller. Patients in whom an abnormal rhythm appears on the oscilloscopic tracing must have a 12-lead ECG to document its presence and determine the type of rhythm. This abnormal rhythm may not be seen when an ECG is obtained using limb clamps and suction cups, as the larger surface area of these electrodes significantly reduces skin resistance in comparison to the much smaller disposable adhesive electrodes used for continuous monitoring.

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REFERENCES


A New, Fully Protected Biopsy Scraper for Transbronchial Lung Biopsy

To the Editor:

For the purpose of performing safer and easier transbronchial lung biopsy, our group has recently developed a new biopsy scraper. The scraper is covered by polyethylene (PE) or Teflon tube: diameter 2.4 mm, total length 1,080 mm. The tip size segment (biopsy segment) is 2.5×1×1.7 mm. Under remote control, the tip segment can be extended and retracted into the PE tube. It can be stopped in either...

Figure 1. The biopsy scraper (lower); close-up of tip segment when extended (upper right) and when blade is raised (upper left).

Figure 2. The natural size of biopsied specimen obtained by the scraper (left), and by an ordinary forceps (right).