

Anesthesiology
59:159, 1983

A Plea for the Routine Use of Oxygen Analyzers

To the Editor:—I would like to respond to opinions stated by Alfred Feingold, M.D., concerning the continuous use of oxygen analyzers.¹ In addition to questioning their usefulness, he suggests that currently available analyzers are unreliable and require frequent maintenance and calibration. This simply is not true. Models that I have used over the past 6 years are very reliable, need little maintenance, and can be calibrated rapidly. Incorporating a check and calibration of the oxygen analyzer during the first daily check of the anesthesia machine requires less than 30 sec. In our hospital, oxygen analyzers are used during all general anesthetics, and they are turned *on*.

Mazze pointed out the need for continuous in-line oxygen monitors some 10 years ago.² Currently available oxygen analyzers accurately will analyze and display the inspired oxygen concentration and rapidly will detect and warn of hypoxic mixtures caused by either machine malfunctions or human error. Because hypoxia during anesthesia may be difficult to detect, this information is invaluable.³ An oxygen analyzer obviously will not detect a lack of ventilation of a patient's lungs, but another simple monitor, the precordial or esophageal stethoscope, will.

Dr. Feingold also suggests that proportional flow devices may be a better way to assure that minimum safe concentrations of oxygen are delivered to patients. Although I cannot understand why any new anesthesia machine sold today should be able to deliver any less than 21% oxygen, mechanical malfunction and delivery of the incorrect gas to anesthesia machines will continue to occur. In these cases, only an oxygen analyzer monitoring the inspired gases or the patient would detect hypoxia quickly.

In this state over the past 10 years, more than one anesthetic death resulting from the accidental administration of hypoxic gases has occurred when oxygen

analyzers were not being used. In June 1982, the South Carolina Department of Health and Environmental Control added the following standard: "Anesthesia apparatus shall be equipped with a device to measure the oxygen component of the gas being inhaled by the patient. The device shall emit an audible and/or visual alarm should the proportion of oxygen fall below a safe level."⁴

In short, oxygen analyzers are relatively inexpensive, are reliable, and are easy to maintain and use. They will detect low concentrations of oxygen in the inspired gases early and will save lives. Let's use them until a better monitor is available.

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(Accepted for publication January 17, 1983.)

Anesthesiology
59:159-160, 1983

Antagonism of Nitroprusside Effects by Cyanide May Not Be Clinically Relevant

To the Editor:—Recent papers¹⁻³ have attempted to demonstrate that plasma accumulation of cyanide may be responsible for resistance in patients who require large doses of nitroprusside (SNP) to achieve hypotension, by directly antagonizing the vasodilator effects of the drug. This has been discussed most recently by Kruzszyńska *et al.*,³ who showed that this action of SNP on isolated rabbit aortic strips, contracted by various con-

centrations of norepinephrine *in vitro*, were antagonized partially by cyanide. These results are interesting, but one must consider them in the clinical context. Concentrations of cyanide used during these experiments were of the order of 40-100 $\mu\text{mol/l}$. Analysis of blood samples from many hundreds of patients receiving SNP in the operating theater and intensive therapy unit (ITU) has convinced us that plasma levels during clinical