COMMUNICATION
TO THE EDITOR

Crisis in Pulmonary Intensive Care

Although nihilistic at its worst, the evolution of disease processes is altered by developments in medical care. The iatrogenic influence of the doctor, in particular, becomes accentuated in intensive care management. The interpretation of consciousness and being alive and the decision to withhold supportive therapy requires mature, objective decisions based on multidiscipline experiences.

Exaggerative and senseless efforts to artificially support ventilation and circulation, unfortunately, are carried out too often, depending on the instincts of the physician in charge in the absence of strict physiologic criteria.

It has been suggested that the proper definition of an intensive care unit must include a mortality rate of at least 25 percent. Unfortunately, the doctor's "bag" has become too full and the instantaneously available diagnostic and therapeutic procedures are beckoning. Too often his performance and audience too resemble an opening night at the theater. The art of communicating with the critically ill patient appears lost. His fears and anxieties are often compounded by the appalling bedside discussions. The "complete team concept" may bring to the bedside in tandem, the physician in charge, anesthetist, thoracic surgeon, neurologist and their respective trainees, associates, nurses and paramedical personnel, and pathology may indeed follow in the wake of the aggressive process. The use of multiple catheters, venous, arterial, intracardiac, urethral and rectal and intubation procedures each carry innate risks which have been documented.

In the broadest sense, most pulmonary intensive care problems deal with impaired gas transport at the tissue level. This includes shock, arrhythmias, circulatory abnormalities, ventilation-diffusion problems, profound anemias and principally the entities requiring the provision and maintenance of an effective upper airway. When ventilatory failure occurs, the rapid recognition of the defect and its multiple complicating factors are necessary to provide optimum patient care. Immediate evaluation should be made whether the patient is well oxygenated and carbon dioxide properly eliminated. These procedures are simple, and essentially non-hazardous. When respiratory arrest occurs first, cardiac arrest and cerebral ischemia usually follow in three to five minutes. When cardiac arrest is primary, respiratory arrest and cerebral damage may occur in a brief matter of one-half a minute. Furthermore, in the presence of anemia and/or reduced blood volume or cardiac output, the margins of safety are considerably less. However, central venous pressure, cardiac outputs and blood volume determinations should not be employed routinely.

The physician in charge should understand the following principles, to mention but a few, before he attempts therapy:

1. abnormalities of gas transport and ventilation (not

the simple movement of air in and out of the lungs),
2. the circulation (including peripheral factors),
3. acid-base problems (respiratory as well as metabolic factors),
4. infectious disease (antimicrobial management),
5. physiologic guidelines in starting as well as weaning the patient off mechanical ventilation (mechanics of breathing and blood gas data).

Optimum Therapy Must Include the Following:
1. Provision for and maintenance of a patent airway.
3. Maintenance of adequate ventilation (assisted or controlled).
4. Provision of continuous oxygen therapy. The delivered concentrations must be monitored. The arterial Po2 should be kept between 80-100 mg Hg when mechanical ventilation is employed. Higher levels are usually not necessary. However, when mechanical ventilation is not employed, lower levels should be maintained in patients with chronic pulmonary emphysema to prevent ventilatory depression from high oxygen concentrations.
5. More specific therapy (steroids, antimicrobials, bronchodilators, fluid and metabolic balance, etc).
6. Careful consideration for the patient's needs as an individual. His fears and anxieties must be allayed and procedures should be explained, preferably by one competent empathetic figure (nurse or physician). Clearly visible, silent and isolated from the next patient "roomettes" are desirable. Isolation rooms for the highly infectious patient or the dying patients are mandatory.

Pitfalls:
1. Avoid vigorous attempts (with mechanical aids and/or respiratory analeptics) to reduce the Pco2, without adequate arterial blood gas and electrolyte monitoring. Sudden changes upward or downward of the Pco2 must be avoided.
2. The significance of the fixed, dilated pupil based on its duration (minutes or hours) should not be interpreted by itself. This "hallmark" must be correlated with careful EEG monitoring and sound neurologic judgment. The careful neurologist may wisely take a control EEG before determining brain death in the young or doubtful patient. Consciousness and being alive should not be equated as one and the same.
3. Therapy should be stopped at the proper moment to avoid having the dead rise again for a life of total invalidism. When the brains are out, the patient is in fact dead. However, the diagnosis of total loss of centrogenic and chemoreflex drive for respiration (respiratory death) and the decision to stop ventilatory support should be made only after careful medical and legal considerations on the part of at least two and preferably three physicians.

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