The Postoperative Period Summary*

Richard A. Dart, MD, FCCP

(CHEST 1999; 115:48S–49S)

Pain Management

Following considerable discussion of this area, it was noted that meta-analysis of pain management has been done. However, this does not include analysis of subgroups. It was the consensus that considerable data are missing on hard numbers and there is little information regarding the duration of therapy. In subspecialty groups such as thoracic and orthopedic patients, a local epidural is good in postoperative use only with less hypotension, hypertension, nausea, vomiting and ileus, earlier mobilization, and decreased pulmonary complications. Operatively, opioids plus analgesia are believed to be better than opioids alone, and those are better than local anesthesia. The skill and experience of both physicians and nurse teams are considered important. Additionally, pain was a determining factor in patients who go to the ICU.

Recommendation for Future Directions in Research

1. More intensive analysis of pain management in the postoperative patient subgroups is needed.

ICU Discussion

In this discussion, placement of patients in the ICU was considered essential for the subgroups that include cardiothoracic surgery (coronary artery bypass graft, thoracotomy) for which evidence is available, neurosurgery (back and cranial), and vascular surgery (carotid endarterectomy and abdominal aortic aneurysmectomy, elective and/or emergent, although there was less evidence available for the latter two).

Significant covariables for determining ICU care were noted to include the following: patient factors (ie, their preoperative state, whether the surgery was elective or emergent); and hospital factors, which include available skill and care levels, the intraoperative surgery and anesthesia, and the presence of postoperative nursing staff, house staff, and internist support.

In this discussion, future directions included a scoring system to predict which patients might need to return to the ICU because of complications and a quick triage mechanism to assess the patients. A feedback loop built into this system would assist physicians in knowing how they are doing with patient selection and care. In lieu of randomized controlled trials that may provide optimal evidence but are not available in the ICU for management strategies, the consideration for continuous quality improvement was recommended. In conclusion, it was the consensus that there is a need for better references and data in many of these areas.

Recommendation for Future Directions in Research

1. Scoring system to predict the patient’s need to return to the ICU.

Postoperative Ventilation

Three subgroups were discussed, including low risk (healthy), medium risk (chronically ill), and high risk (acutely ill). Methods to determine the risk included intraoperative lung volumes, temperature, neurologic condition (pain and awake state), and self-protection of airway. The medium risk includes the chronically ill and those whose states would not allow immediate extubation for a number of reasons, such as neuromuscular and respiratory problems, age, and organ failure. In regard to ventilation, there was no consensus on the modes of ventilation, new or old, although there is evidence that the use of protocol weaning does hasten liberation from ventilatory support.

In conclusion, it was the consensus that the future of this area needs exploration of new ventilatory modes, interaction between patient needs and ventilatory support, new methods for ventilation for acute pulmonary injury and/or multiorgan system failure, and methods of individualizing therapy. In addition, multicenter trials to evaluate the treatment of the acutely ill with such methods as proning, perfluorocarbons, extracorporeal mechanical oxygenation, venous extracorporeal mechanical oxygenation, and nitric oxide were discussed. No conclusions could be reached due to the lack of data.

*Richard A. Dart, MD, FCCP, was the moderator for this section of the conference, and the participants were Christine Peeters-Asdorian, MD; Carl A. Sirio, MD, FCCP; Norman W. Rizk, MD; James G. Ramsay, MD; George L. Blackburn, MD; and Robert Narins, MD.

Correspondence to: Richard A. Dart, MD, FCCP, Marshfield Clinic, 1000 N Oak Ave, Marshfield, WI 54449-5777; e-mail: dartr@mfldclin.edu
Recommendations for Future Directions in Research

1. Need to develop a consensus on the modes of ventilation, new vs old.
2. New methods for ventilation for acute pulmonary injury and/or multiorgan system failure.
3. Multicenter trials to evaluate therapy of the acutely ill.

Cardiac Management

As noted by Dr. Ramsay, coronary artery disease is common in the surgical population, with up to 50% of postoperative deaths due to cardiac events. Most of these events are ischemic, with some being exacerbations of underlying congestive heart failure (CHF). Recent data indicate that acute perioperative β-adrenergic blockade can reduce ischemia and ischemic events. Postoperative monitoring should focus on myocardial ischemia, with preparation for rapid treatment using IV therapy. A few studies suggest that elderly patients with known coronary artery disease undergoing major procedures might benefit from perioperative treatment guided by information from a pulmonary artery catheter. Postoperative CHF is likely to present early after surgery, and patients may need aggressive management with diuretics, vasodilators, and inotropic drugs. Mechanical ventilation should be considered. When a patient develops severe or refractory dysrhythmias, serum magnesium levels should be supplemented and consideration given to IV use of amiodarone. Postoperative hypertension is common and can precipitate ischemia, CHF, and arrhythmias, as well as cause bleeding. Newer IV drugs are arterial-specific and can lower BP in a smooth and predictable manner. All acute cardiac disorders can be predicted or exacerbated by inadequate pain control, hypoxemia, and fluid or electrolyte disorders.

Recommendations for Future Directions in Research

1. Develop parameters to identify cardiac patients needing mechanical ventilatory support.
2. Dissemination of information of newer methods to control acute hypertensive urgencies postoperatively.

Nutrition

It was believed that the best approach to define the high-risk patient should be based on the acute physiology and chronic health evaluation score, weight loss, malnutrition, and low albumin level. Management strategies, by consensus, were not to allow starvation to go > 5 days, the initiation of early enteral feedings, and special dietary formulas. This had a carryover on fluid and electrolyte management with the addition of such specialty needs as magnesium, vitamins, and macronutrients to assist in avoiding starvation. It was believed that data supported a > 15 g protein and > 1,000 calories per day. For intermediate- and low-risk patients, the above management was considered optional and dependent on the physician’s assessment of the patient’s status.

Recommendation for Future Directions in Research

1. Increase effort to educate practicing physicians about nutritional supplement and when and how to apply.

Renal Protection in the Postoperative Patient

It is noted that renal insufficiency carries with it an increased risk for drugs and toxins and could be subdivided into high/intermediate risk, and patients with known or prior renal insufficiency vs new onset. It was recommended that chronic renal failure patients should be kept at a sufficient volume before surgery and, after surgery, tight maintenance of fluid balance is very important.

With new acute renal failure postoperatively, it was considered to occur most likely in the face of other codependent factors such as sepsis. Dialysis support would be dependent on common conditions. It was emphasized that diabetes is a particularly high risk in patients > 60 years and with creatinines levels > 2.0. Future recommendations would be for longitudinal studies and cost-effectiveness of prevention in high-risk patients exposed to dye load.

In conclusion, it was the consensus that in high-risk patients, the most important issues are volume, preoperatively and postoperatively, and the avoidance of or elimination of toxins in the low-risk patients. Most of this was volume.

Recommendations for Future Directions in Research

1. Develop protocols that help identify low-, intermediate-, and high-risk patients with renal dysfunction for adverse outcomes from radiocontrast.
2. Continued education of the imperative importance of normal volumes in this population.

NOTE: At the conclusion of this meeting, it was noted that there were concerns on the part of some members of the group with this conversational approach to consensus.