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Current Controversies in Adult Outpatient Anesthesia

Montreal – The practice of ambulatory anesthesia has changed dramatically in recent years. So great has been the change that outpatients in the United States are by far the major recipients of anesthetics. With these changes have come questions such as whether it is cost-effective to use new agents such as sevoflurane. According to an investigator here, the cost of the agent alone is only one consideration in total costs. Several expenses, such as labour costs, must also be included in the cost scenario, which also includes patient satisfaction. In addition, using sevoflurane for induction and maintenance reduces acquisition costs. It has also been found that ambulatory anesthesia is safe for a surprisingly high number of people, including the elderly and patients with pre-existing disease. Recovery room stays are no longer necessary for many patients and adverse effects are reduced with the new agents. As a result, patient satisfaction is extremely high for inhalational indiction and it has become their induction method of choice for surgery.

According to Dr. Jeffrey Apfelbaum, Vice Chair of Clinical Affairs, Department of Anesthesia, University of Chicago, Illinois, the practice of ambulatory anesthesia has been revolutionized with the advent of shorter acting, faster emergence anesthesias and the ever increasing popularity of outpatient surgery.

For example, in the United States, "70% of all anesthetics delivered in 1998 were to come and go day patients," Dr. Apfelbaum told delegates here. "In 1970, we were at virtually zero."

In addition, more and more procedures involving anesthetic are being done outside the hospital: Up to 20% of all the operations conducted in the United States are being done in an office space setting. "We're doing more surgery that, a decade ago, we thought was not possible, except in the hospital," Dr. Apfelbaum commented.

Those dramatic changes in anesthesia are being accompanied by several questions, he noted. Is it really cost-effective to use the shorter acting, faster emergence anesthetics, such as sevoflurane, propofol and desflurane? Do physical status and age make a difference in patient selection for day surgery? Can patients be made more satisfied by using the new agents?

Value Based Anesthesia

When looking at the cost of anesthesia, the mistake should not be made of looking at the anesthetic agent as the major cost, Dr. Apfelbaum said. "We have to look at the total cost – direct and indirect costs." Direct costs, he noted, "are what many would have you believe are the only costs." These include the acquisition costs of the drugs, adjuvants, equipment, lab costs, and - the highest cost of all - professional salaries.

However, indirect costs are equally important, he said. These include operating room downtime between patients, the intensity of care in the PACU and the maintenance of equipment. As well, patient satisfaction is coming more and more into play as an indirect cost, "as consumers understand they do not have to be sleeping for extended periods or nauseated for 12 hours after surgery," Dr. Apfelbaum said. "Patient satisfaction makes an enormous difference."

Unfortunately, Dr. Apfelbaum said, the message that is constantly being touted to anesthetists is that the focus should be placed on acquisition costs. In fact, labour costs alone are two orders of magnitude greater than anesthetic maintenance costs.
"We've got all these system problems costing us billions of dollars a year, and we're worrying about a $6 anesthetic versus a $12 anesthetic," he commented.

Furthermore, Dr. Apfelbaum said that the cost of administration of the anesthetic can be significantly cheaper using a sevoflurane induction and maintenance technique instead of a propofol induction with isoflurane, sevoflurane or desflurane techniques.

“We’ve now clearly shown we can now save enormous amounts of money by, for the first time, taking advantage of the recovery profiles seen with sevoflurane,” said Dr. Apfelbaum, adding that this agent is his anesthetic of choice for most patients.

“When we spend a little more on the acquisition costs (with anesthetics like sevoflurane), we’re saving enormous amounts of money at the tail end. In some cases, we can even save money at both ends, with sevoflurane induction and sevoflurane maintenance procedure.”

Who is Appropriate for Outpatient Surgery?

Outpatient surgery with anesthesia is safe for a surprisingly high number of patient population groups, Dr. Apfelbaum said. The elderly, for example, are less likely to experience post-operative nausea and vomiting, less likely to experience pain and significantly less likely to experience drowsiness after surgery than are other groups.

Age alone plays no significant difference in the rate of unanticipated hospital admissions after day surgery. In addition, new data are emerging that patients with stable, pre-existing disease may in fact be appropriate candidates for day surgery.

Newly designed questionnaires also help to decide which patients are appropriate candidates for day surgery with ambulatory anesthesia. Patients of Dr. Apfelbaum and his colleagues can now fill out simple questionnaires using touch-screen computers in the office, via the Internet or by voice mail. Based on the answers, a detailed history is printed out for physicians to see prior to surgery. “It takes the average patient 11.5 minutes to answer 150 questions, for which we get a very detailed history,” Dr. Apfelbaum said.

Dr. Apfelbaum also noted that a recovery room stay is no longer necessary for the majority of patients after outpatient surgery. “Sixty-five percent of our patients who have general anesthesia in any of our operating sites are able to sit and stand and walk away from the operating table. We can do that with drugs like sevoflurane,” he said.

Advantages of Inhalation Induction

Inhalation induction has tremendous advantages in a number of patient populations, including both adults and children who prefer to not have a needle stick before initiation of surgery, Dr. Apfelbaum said.

In the past, “we really didn’t have the opportunity to offer inhalation anesthesia that was smooth and without significant consequence,” he commented. “Now, with a drug like sevoflurane available to us, inhalational anesthesia is every bit as safe and every bit as well accepted by patients as intravenous induction of anesthesia.”

Risks and complications with inhalational induction can include airway irritability, coughing and bucking. “But these possibilities are frankly no higher than the complications we see with intravenous induction,” Dr. Apfelbaum said, whose risks also include some coughing, as well as the possibility of the intravenous falling out and loss of the ability to continue to ventilate the patient. “Inhalational induction may in fact offer some potential benefit because, invariably, with an intravenous induction, patients may stop breathing - which we generally don’t see with an inhaled induction.”

Conclusion

Patients administered sevoflurane “wake up clear-headed, awake, alert. They immediately reunite with family and walked away from the operating table,” Dr. Apfelbaum said.

“We’ve done thousands of patients with inhalational inductions and inhalations for maintenance and found that once these patients have this technique, they’re very pleased and very happy with it,” he concluded. “Patient satisfaction is very high and they often prefer it as the method of induction the next time they have surgery.”