

ASA ISSUE

New Vital Signs Monitors p. 39 • A Crash Course in Crash Carts p. 47  
Managing Opioid-tolerant Patients p. 53 • Hospital OR Monitor p. 80

www.outpatientsurgery.net

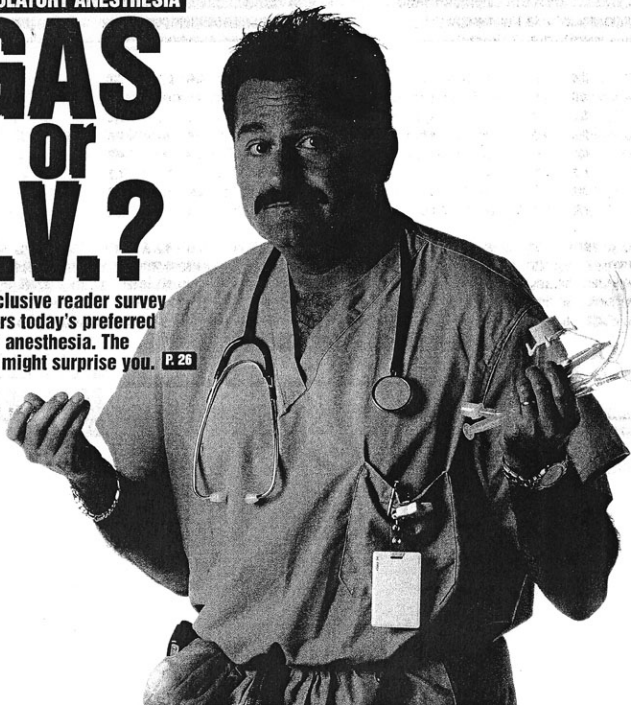
# Outpatient Surgery

October 2004 Magazine®

**AMBULATORY ANESTHESIA**

## GAS or I.V.?

Our exclusive reader survey  
uncovers today's preferred  
form of anesthesia. The  
results might surprise you. **P. 26**

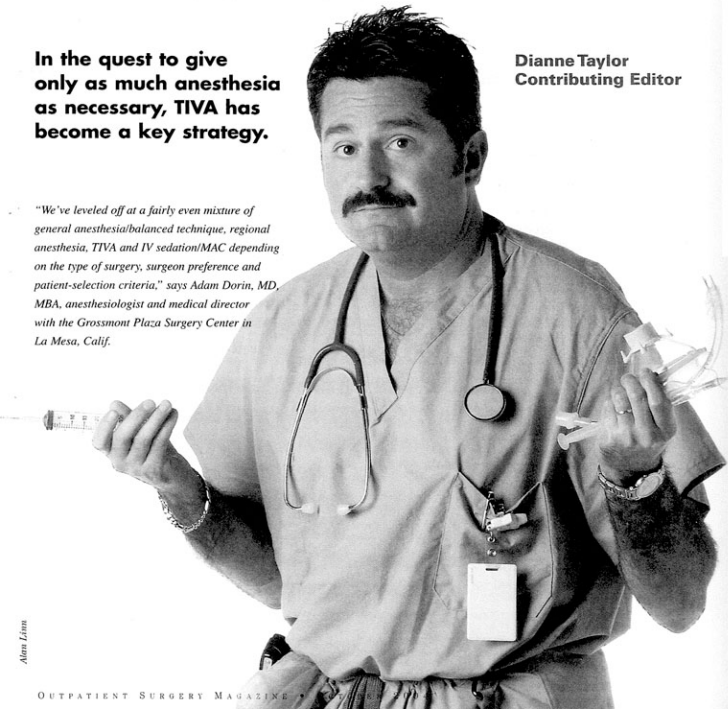


# Gas or I.V.?

**In the quest to give only as much anesthesia as necessary, TIVA has become a key strategy.**

**Dianne Taylor**  
Contributing Editor

*"We've leveled off at a fairly even mixture of general anesthesia/balanced technique, regional anesthesia, TIVA and IV sedation/MAC depending on the type of surgery, surgeon preference and patient-selection criteria," says Adam Dorin, MD, MBA, anesthesiologist and medical director with the Grossmont Plaza Surgery Center in La Mesa, Calif.*



**T**he hit 'em with gas approach to anesthesia is long gone. Thanks to advances like propofol and laryngeal mask airways (LMAs), providers are fine-tuning the level of anesthesia to the procedure, patient and skills of the surgical team — thereby preventing anesthesia excess.

The most striking example, according to *Outpatient Surgery's* recent survey of 135 readers, is the growing use of total intravenous anesthesia (TIVA) for monitored anesthesia care (MAC). Many survey responders say they use this technique in one-fourth to one-half or more of cases, depending primarily on the case mix.

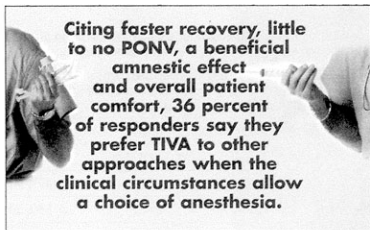
"Today, we use TIVA/MAC for 60 percent of cases whereas five years ago, it was the opposite," says one multispecialty ASC medical director. The end result, according to our responders, is improved efficiency and patient satisfaction.

#### **TIVA takes hold**

Citing faster recovery, little to no PONV, a beneficial amnestic effect and overall patient comfort, 33 percent of responders say they prefer TIVA to other

approaches when the clinical circumstances allow a choice of anesthesia. The majority of responders use TIVA for conscious sedation, or MAC. Ninety-one percent of responders commonly use this approach during GI endoscopy, and 60 percent employ it for breast biopsy procedures.

"Patients indicate they'd have



**Citing faster recovery, little to no PONV, a beneficial amnestic effect and overall patient comfort, 36 percent of responders say they prefer TIVA to other approaches when the clinical circumstances allow a choice of anesthesia.**

the procedure done again with this type of anesthetic and would highly recommend it to their colleagues, families and friends," says Sallie Poepsel, MS, CRNA, with the Columbia Endoscopy Center, Columbia, Mo.

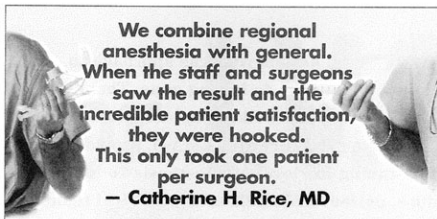
About 69 percent say they

also use TIVA for some cases that require deep sedation or general anesthesia, and our survey suggests that providers tend to take TIVA into this less-charted territory after the surgical team becomes more experienced with the less-complex MAC-TIVA approach. Twenty percent of responders use TIVA to produce deep sedation in patients undergoing breast augmentation, and 12 percent say they employ this approach for patients undergoing inguinal hernia repair. "We use TIVA for more complicated cases as our confidence in the surgeons' speed and finesse has increased," reports Daniel P. Conrad, MD, anesthesiologist with the Tallahassee Single Day

Surgery center, Tallahassee, Florida. "Some surgeons are afraid of patient awareness under TIVA but have seen how quickly they recover and how safe the technique can be for patients with pulmonary or cardiac problems."

Still, our survey suggests that cost, complexity and individual patient needs are keeping TIVA from largely replacing inhalational agents when the procedure warrants general anesthesia. A full 93 percent of responders routinely use inhalational

anesthesia for laparoscopic cholecystectomy and 94 percent use it for tonsillectomy with adenoidectomy. Explains anesthesiologist Adam Dorin, MD, medical director with the Grossmont Plaza Surgery Center in La Mesa, Calif.: "There's no way around the fact that TIVA becomes more expensive and complex with prolonged cases, with the tubing and pumps and the need to titrate various IV agents to achieve each component of anesthesia. Since the incidence of PONV is so low using even inhalational agents, especially for short ASC procedures, it is often easier, more cost-effective, and faster to put patients to sleep using a balanced technique for fast-turnover ASC cases that



**We combine regional anesthesia with general. When the staff and surgeons saw the result and the incredible patient satisfaction, they were hooked. This only took one patient per surgeon.**  
— Catherine H. Rice, MD

require a general anesthetic." In our survey, 40 percent of responders who use TIVA rate the cost as "moderate" or "poor." Adds Dr. Conrad: "Airway difficulty with obese patients becomes a problem with TIVA, especially in head and neck cases, and patient cost can be higher than in simple regional techniques."

#### Balanced anesthesia

Increasingly, however, IV agents are serving as adjuncts to inhalational agents for patients who need general anesthesia. Eighty-three percent of our responders use a "balanced" approach to general anesthesia which, along with low gas flows, reduces the gas

## Outpatient Surgery Reader Survey

### ANESTHESIA PRACTICES BY PROCEDURE

What is your providers' primary anesthesia approach for each of the following procedures in the otherwise healthy outpatient? Total respondents in parenthesis after each procedure.

Procedure	Moderate (conscious) sedation using TIVA (MAC)	Deep sedation/general anesthesia using TIVA	Balanced general anesthesia	Regional anesthesia
GI endoscopy (91)	91% (83)	8% (7)	1% (1)	0%
Breast biopsy (90)	60% (54)	19% (17)	21% (19)	0%
Inguinal hernia repair (93)	27% (25)	12% (11)	49% (46)	12% (11)
Knee arthroscopy (96)	10% (10)	7% (7)	56% (54)	26% (25)
Breast augmentation (81)	6% (5)	20% (16)	74% (60)	0%
ACL repair (88)	2% (2)	3% (3)	70% (62)	24% (21)
Tummy tuck (75)	5% (4)	8% (6)	85% (64)	1% (1)
Lap. cholecystectomy (81)	2% (2)	5% (4)	93% (75)	0%
Gynecologic lap. surgery (84)	2% (2)	6% (5)	92% (77)	0%
Tonsillectomy/adenoidectomy (95)	1% (1)	5% (5)	94% (89)	0%

requirement and thus alleviates gas-related hangover effects. "We use balanced anesthesia and medications carefully titrated according to patient needs. This includes anti-emetics and analgesics," notes Janelle Oliver, manager of Wichita Clinic Day Surgery in Wichita, Kan. "Our awareness of pain control and nausea issues has evolved to allow for fast-tracking of these patients that have been medicated in the OR." More than three-fourths of our panel (76 percent) also report giving anti-emetics routinely along with administration of general anesthesia.

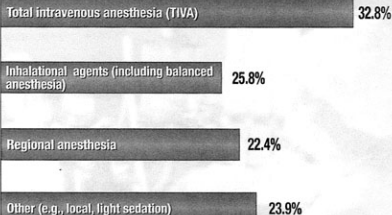
The benefits of inhalational regimens, say those who prefer them for many if not all cases that require deep sedation with muscle relaxation or general

anesthesia, are ease of use, cost-effectiveness and rapid induction. "Due to turnover time, it is faster to use a general anesthetic than to wait for a regional to set up," notes Sandra Hoytel, RN, CPAN, with the Iowa Methodist Medical Center in Des Moines, Iowa. The drawbacks, however, still remain on the back end of surgery. Forty-one percent of responders who say they prefer inhalational agents rate PONV incidence as "moderate" or "fair," and 17 percent put patient satisfaction levels in these same categories. "With inhalational agents, there is an

## Outpatient Surgery Reader Survey

### TIVA TOPS THE LIST OF PREFERRED ANESTHESIA

When the same procedure can be performed using any of the following approaches, which one would your anesthesia/surgical team typically prefer? (n=134)



increased chance for PONV, and therefore an increased length of stay," writes one ASC clinical director. Adds Dan Simonson, CRNA, with Spokane Eye Surgery Center in Spokane, Wash.: "Efficiency goes way down due to the necessity of recovering patients from general anesthesia."

### The next frontier

Three-fourths of our panel say they employ regional anesthesia at least occasionally. When it comes to actual practice, however, just one-fourth employ the technique for knee arthroscopies and ACL repairs, and fewer (12 percent) employ it for inguinal hernia repairs.

Comments suggest that this limited use of regional anesthesia may be due to logistical hurdles yet to be overcome,

like finding the space and time to set up the blocks pre-operatively, as well as practitioner expertise. Nearly three-fourths of the responders who use regional anesthesia techniques rate ease of use as just "fair" to "moderate."

"Efficacy of regional approaches is the most operator-dependent," says Daniel Forsberg, director of clinical operations with New York's Forest Hills Hospital. "Appropriate pre-OR space and staff numbers to begin anesthetic is required. Otherwise, delays in OR turnaround are encountered most frequently with this type of anesthetic." Adds Dr. Conrad: "Ease of use is largely dependent on dexterity of the anesthesiologist and the willingness of the surgeon to be patient and wait." David Van Ess, MD, medical director with Hamden Surgery Center in Hamden, Conn., agrees: "Regional is technically much more difficult and time-consuming to perform."

Still, the reasons for pursuing regional anesthesia are compelling. "We combine regional anesthesia in a single or continuous fashion with general. When the staff and surgeons saw the result and the incredible patient satisfaction, they were hooked. This only took one patient per surgeon," says Catherine H. Rice, MD, anesthesia director with Physicians Surgery Center in Victorville, Calif.

## A mixed future

Anesthesia approaches diverge most when it comes to borderline cases that create more discomfort than MAC alone can handle but may not warrant general anesthesia — and the risks and delayed recovery that can accompany it. Nearly one-half of responders prefer balanced anesthesia for inguinal hernia repairs, for example, yet the other half opt for alternate techniques like TIVA or regional anesthesia.

What is clear is that all three basic approaches to anesthesia have unique pros and cons, and the approach you choose

depends not only on the procedure but on patient needs as well as surgeon preferences and provider expertise. For these reasons, the future of anesthesia holds a mix of approaches, each of which will be finely tuned to meet the demands of the situation at hand. "We've leveled off at a fairly even mixture of general anesthesia/balanced technique, regional anesthesia, TIVA and IV sedation/MAC depending on the type of surgery, surgeon preference and patient-selection criteria," says Dr. Dorin. *OSM*

---

Contact Dianne Taylor at [dtaylor@outpatientsurgery.net](mailto:dtaylor@outpatientsurgery.net).