

# THIS MONTH IN *Anesthesiology*

## Effects of Supervision by Attending Anesthesiologists on Complications of Emergency Tracheal Intubation ..... 973

Supervision of anesthesia residents by an attending anesthesiologist is associated with a decreased incidence of complications during emergent intubations outside the operating room. See the accompanying Editorial View on page 945

## Fiberoptic Oral Intubation: The Effect of Model Fidelity on Training for Transfer to Patient Care ..... 1007

Training for fiberoptic orotracheal intubation using a high-fidelity simulator was not different than training with a low-fidelity simulator.

## Desmopressin Reduces Transfusion Needs after Surgery: A Meta-analysis of Randomized Clinical Trials ..... 1063

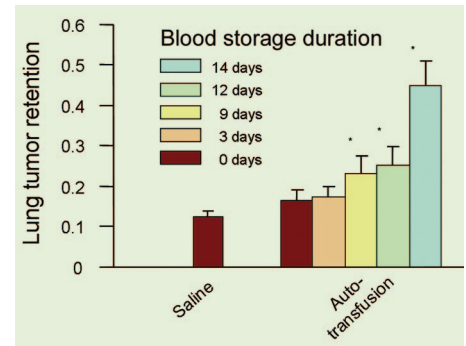
Desmopressin is associated with a significant reduction in transfusion of blood products.

## Sympathetic Nervous System: Evaluation and Importance for Clinical General Anesthesia (Review Article) ..... 1113

This review evaluates different methods for determination of sympathetic nervous system activity and describes its role in human neurohumoral circulatory control. The effects of general anesthesia on sympathetic nervous system activity and their relevance for clinical anesthesia are discussed.

## Blood Transfusion Promotes Cancer Progression in Rats ..... 989

Mechanisms underlying the alleged cancer-promoting effects of blood transfusion are unknown, including the involvement of donors' leukocytes, erythrocytes, and soluble factors. Two tumor models were used in rats to study the impact of blood transfusion on the host ability to clear circulating cancer cells and host survival rates. The potential deleterious characteristics of the transfusion were also studied. Blood transfusion, in conjunction with blood storage time, was found to be an independent and significant risk factor for cancer progression, and aged erythrocytes mediated the effects. In rats, transfusion of fresh blood is less harmful than transfusion of stored blood. These results have implications for cancer patients receiving erythrocyte transfusions. See the accompanying Editorial View on page 951



## $\gamma$ -Aminobutyric Acid-mediated Neurotransmission in the Pontine Reticular Formation Modulates Isoflurane Anesthesia ..... 978

This study examined the effect of isoflurane on  $\gamma$ -aminobutyric acid (GABA) levels in pontine reticular formation and the effect of drugs that increase or decrease GABA levels in the pontine reticular formation in experimental animals. Compared with wakefulness, GABA levels were significantly decreased by isoflurane. Nipecotinic acid increased GABA levels and increased isoflurane induction time, whereas 3-mercaptopropionic acid decreased GABA levels and decreased isoflurane induction time. These results indicate that decreasing rather than increasing pontine reticular formation GABA levels is one mechanism by which isoflurane causes loss of consciousness and altered cortical excitability. See the accompanying Editorial View on page 948

## How Much Does Pharmacologic Prophylaxis Reduce Postoperative Vomiting in Children? ..... 1023

Using a new risk scale developed for children, the effect size was calculated for treatments recommended for the pediatric population in the new Guidelines for the Management of Postoperative Nausea and Vomiting. Six single-drug therapies and five combination treatments were analyzed for risk reduction. With single-agent therapy using the 5-hydroxytryptamine receptor antagonists or dexamethasone, a 50–60% relative risk reduction is expected. Droperidol offers only a 40% decrease. With the combinations of a 5-hydroxytryptamine receptor antagonist and dexamethasone, a relative risk reduction in vomiting of about 80% is expected.

## Involvement of $\beta_3$ -Adrenoceptor in Altered $\beta$ -Adrenergic Response in Senescent Heart ..... 1045

In the senescent heart,  $\beta$ -adrenergic responsiveness is altered in parallel with  $\beta_1$ - and  $\beta_2$ -adrenoceptor down-regulation. This study tested the hypothesis that the  $\beta_3$ -adrenoceptor plays a role in  $\beta$ -adrenergic receptor dysfunction in the senescent heart.  $\beta$ -adrenergic responses were investigated *in vivo* using echocardiography and *in vitro* using isolated left ventricular papillary muscle in young adult and senescent rats. An impaired positive inotropic effect in parallel with  $\beta_3$ -adrenoceptor up-regulation was confirmed in senescent hearts both *in vivo* and *in vitro*. In the senescent group, the positive inotropic effect of  $\beta$ -adrenergic agonists was partially restored by nitric oxide synthase inhibitors. This was not the case in the young adult group. These results indicate  $\beta_3$ -adrenoceptor overexpression plays a role in the altered  $\beta$ -adrenergic response in senescent cardiomyopathy *via* the induction of nitric oxide. See the accompanying Editorial View on page 956