

Sevorane

סבורן

Sevoflurane 100%

חברת AbbVie Biopharmaceuticals Ltd. מבקשת להודיע כי העלון לרופא של התכשיר עודכן. העלון של התכשיר שבנדון עבר עדכון כללי. בהודעה זו מצוינים סעיפים בהם נעשה שינוי מהותי או שינוי המהווה החמרה. מידע שהתווסף מסומן **באדום** עם קו תחתני, ומידע שהוסר מסומן **בכחול** עם קו אמצעי. עדכונים נוספים אשר אינם מהווים החמרה או שאינם מהותיים, אינם נכללים בהודעה זו.

ההתוויה המאושרת לתכשיר:

Induction and maintenance of general anesthesia.

העלון לרופא עודכן בסעיפים הבאים:

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INDICATIONS AND USAGE

Sevoflurane is indicated for induction and maintenance of general anesthesia in adult and pediatric patients for inpatient and outpatient surgery.

Sevoflurane should be administered only by persons trained in the administration of general anesthesia. Facilities for maintenance of a patent airway, artificial ventilation, oxygen enrichment, and circulatory resuscitation must be immediately available.

~~The concentration of sevoflurane being delivered from a vaporizer must be known exactly~~

~~As volatile anaesthetics differ in their physical properties, only vaporizers specifically calibrated for sevoflurane must be used~~

~~The administration of general anaesthesia must be individualized based on the patient's response~~

~~Hypotension and respiratory depression increase as anesthesia is deepened~~

Since level of anesthesia may be altered rapidly, only vaporizers producing predictable concentrations of sevoflurane should be used.

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WARNINGS

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Pediatric Neurotoxicity



Published animal studies demonstrate that the administration of anesthetic and sedation drugs that block NMDA receptors and/or potentiate GABA activity increase neuronal apoptosis in the developing brain and result in long-term cognitive deficits when used for longer than 3 hours. The clinical significance of these findings is not clear. However, based on the available data, the window of vulnerability to these changes is believed to correlate with exposures in the third trimester of gestation through the first several months of life, but may extend out to approximately three years of age in humans (see **PRECAUTIONS - Pregnancy, PRECAUTIONS - Pediatric Use, and ANIMAL TOXICOLOGY AND/OR PHARMACOLOGY**).

Some published studies in children suggest that similar deficits may occur after repeated or prolonged exposures to anesthetic agents early in life and may result in adverse cognitive or behavioral effects. These studies have substantial limitations, and it is not clear if the observed effects are due to the anesthetic/sedation drug administration or other factors such as the surgery or underlying illness.

Anesthetic and sedation drugs are a necessary part of the care of children needing surgery, other procedures, or tests that cannot be delayed, and no specific medications have been shown to be safer than any other. Decisions regarding the timing of any elective procedures requiring anesthesia should take into consideration the benefits of the procedure weighed against the potential risks.

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PRECAUTIONS

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Information for Patients

Effect of anesthetic and sedation drugs on early brain development

Studies conducted in young animals and children suggest repeated or prolonged use of general anesthetic or sedation drugs in children younger than 3 years may have negative effects on their developing brains. Discuss with parents and caregivers the benefits, risks, and timing and duration of surgery or procedures requiring anesthetic and sedation drugs (see **WARNINGS - Pediatric Neurotoxicity**).

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Pregnancy

Risk Summary

There are no adequate and well-controlled studies in pregnant women.

In animal reproduction studies, reduced fetal weights were noted following exposure to 1 MAC sevoflurane for three hours a day during organogenesis. Developmental and reproductive toxicity studies of sevoflurane in animals in the presence of strong alkalies (i.e., degradation of sevoflurane and production of Compound A) have not been conducted. Published studies in pregnant primates demonstrate that the administration of anesthetic and sedation drugs that block NMDA receptors and/or potentiate GABA activity during the period of peak brain development increases neuronal apoptosis in the developing brain of the offspring when used for longer than 3 hours. There are no data on pregnancy exposures in primates corresponding to periods prior to the third trimester in humans.



The estimated background risk of major birth defects and miscarriage for the indicated population is unknown. All pregnancies have a background risk of birth defect, loss, or other adverse outcomes. In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2-4% and 15-20%, respectively.

Data

Animal Data

Pregnant rats were treated with sevoflurane (0.22%, 0.66%, or 2.2% equals 0.1, 0.3, or 1.0 MAC) without CO₂ absorbent for three hours per day during organogenesis (from Gestation Day 7 to 17). Fetuses obtained by Cesarean section were examined on Gestation Day 20 while some animals were maintained for littering and pups were examined for adverse effects. There were no adverse effects on fetuses at 0.3 MAC. Reduced fetal body weights and increased skeletal variations such as delayed ossifications in the presence of maternal toxicity (reduced food and water intake and body weight of the dams) were noted at 1 MAC. In dams allowed to litter, reduced pup bodyweight gain and evidence of developmental delays (slight delay in eyelid opening and increased incidence of nonreactive animals in the visual placing reflex test) were noted in the 1.0 MAC treatment group.

Pregnant rabbits were treated with sevoflurane (0.1, 0.3, or 1.0 MAC) without CO₂ absorbent for three hours per day during organogenesis (from Gestation Day 6 to 18). There were no adverse effects on the fetus at any dose; the mid- and high-dose produced a 5% and 6% decrease in maternal body weight, respectively.

In another study, pregnant rats were administered sevoflurane (0.1, 0.3, or 1.0 MAC) from Gestation Day 17 to Postnatal Day 21. Pup body weights were reduced in the 1.0 MAC treatment group in the absence of maternal toxicity. There was no effect of sevoflurane on sensory function (visual, auditory, nociception, righting reflexes), motor (roto-rod), open field test, or learning tasks (shuttle box avoidance and water T-maze).

In a published study in primates, administration of an anesthetic dose of ketamine for 24 hours on Gestation Day 122 increased neuronal apoptosis in the developing brain of the fetus. In other published studies, administration of either isoflurane or propofol for 5 hours on Gestation Day 120 resulted in increased neuronal and oligodendrocyte apoptosis in the developing brain of the offspring. With respect to brain development, this time period corresponds to the third trimester of gestation in the human. The clinical significance of these findings is not clear; however, studies in juvenile animals suggest neuroapoptosis correlates with long-term cognitive deficits (see **WARNINGS - Pediatric Neurotoxicity, PRECAUTIONS - Pediatric Use**).

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Pediatric Use

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Published juvenile animal studies demonstrate that the administration of anesthetic and sedation drugs, such as SEVORANE, that either block NMDA receptors or potentiate the activity of GABA during the period of rapid brain growth or synaptogenesis, results in widespread neuronal and oligodendrocyte cell loss in the developing brain and alterations in synaptic morphology and neurogenesis. Based on comparisons across species, the window of vulnerability to these changes is believed to correlate with exposures in the third trimester of gestation through the first several months of life, but may extend out to approximately 3 years of age in humans.



In primates, exposure to 3 hours of ketamine that produced a light surgical plane of anesthesia did not increase neuronal cell loss; however, treatment regimens of 5 hours or longer of isoflurane increased neuronal cell loss. Data from isoflurane-treated rodents and ketamine-treated primates suggest that the neuronal and oligodendrocyte cell losses are associated with prolonged cognitive deficits in learning and memory. The clinical significance of these nonclinical findings is not known, and healthcare providers should balance the benefits of appropriate anesthesia in pregnant women, neonates, and young children who require procedures with the potential risks suggested by the nonclinical data (see **WARNINGS - Pediatric Neurotoxicity, PRECAUTIONS - Pregnancy**).

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העלון לרופא המעודכן נשלח למאגר התרופות שבאתר משרד הבריאות, וניתן לקבלו מודפס על ידי פניה לבעל הרישום,
AbbVie Biopharmaceuticals Ltd, רחוב החרש 4, הוד השרון או בטלפון 7909600 – 09.

בברכה,

מגר' אלינור אטיאס
רוקחת ממונה