SCHEDULING STATUS: S5

PROPRIETARY NAME AND DOSAGE FORM:

HALOTHANE - M & B

COMPOSITION:

HALOTHANE is chemically 2-bromo-2 chloro 1:1:1 :-trifluoroethane to which 0,01 % thymol has been added.

PHARMACOLOGICAL CLASSIFICATION:

A 2.1. Anaesthetics.

PHARMACOLOGICAL ACTION:

HALOTHANE is a volatile anaesthetic administered by inhalation. It has a minimum alveolar concentration (MAC) value of 0,75 %. It is non-flammable and is not explosive when mixed with oxygen at normal atmospheric pressure. It is not irritant to the skin and mucous membranes and does not produce necrosis when spilt on tissues. It suppresses salivary, bronchial, and gastric secretions and dilates the bronchioles. Halothane is absorbed on inhalation. It has a relatively low solubility in blood and is more soluble in the neutral fats of adipose tissue than in the phospholipids of brain cells. Up to 80 % of administered halothane is excreted unchanged through the lungs. Up to 20 % is metabolised by the liver by oxidative and, under hypoxic conditions, reductive pathways. Urinary metabolites include trifluoroacetic acid and bromide and chloride salts (oxidative pathway) and fluoride salts (reductive pathway). It diffuses across the placenta.

The precise mechanism by which inhalation anaesthetics produce loss of perception of sensations and unconsciousness is not known. Proposed mechanisms are based on the Meyer-Overton theory, which demonstrates the correlation between the potency of an anaesthetic and its solubility in oil. Inhalation anaesthetics may interfere with the physiological functioning of nerve cell membranes in the brain via an action at the lipid matrix of the membrane.

INDICATIONS:

Inhalation anaesthesia.

CONTRA-INDICATIONS:

Hypersensitivity to any of the ingredients.

Safety during pregnancy and lactation has not been established.

Not recommended for vaginal delivery unless uterine relaxation is required.

Contra-indicated in porphyria.

Adrenaline and most other sympathomimetic agents, and theophylline, should be avoided during halothane anaesthesia since they can produce cardiac arrhythmias; the risk of arrhythmias is also increased if halothane is used in patients receiving dopaminergic agents.

The use of halothane is generally not recommended in obstetrics because of the increased risk of postpartum haemorrhage.

WARNINGS:

The risk of halothane hepatitis has led to the following guidelines. A careful history should be taken to determine previous exposure and previous reactions to halothane. Repeated exposure within a period of at least 3 months should be avoided unless there are overriding clinical circumstances. Also a history of unexplained jaundice or pyrexia following exposure to halothane is an absolute contra-indication to its future use in that patient.

Patients should be advised of the possibility of psychomotor impairment following the use of halothane. Driving or performance of other tasks requiring alertness and co-ordination may be impaired for about 24 hours post-anaesthesia.

The use of alcohol or central nervous system (CNS) depressants within 24 hours following anaesthia must be avoided unless specifically prescribed or otherwise authorised by the physician or dentist.

DOSAGE AND DIRECTIONS FOR USE:

Inhalation anaesthetics are to be administered only by those individuals experienced in airway management and respiratory support. Equipment and personnel for support of ventilation must be immediately available.

The stated dosages are given as a guideline for use in the average adult. The dosage of inhaled anesthetics must be individualised according to surgical requirements; concurrent use of adjuvant medications and/or nitrous oxide; and patient variables, especially age, body temperature, and physical condition.

Anaesthetic requirements are increased in very young children and decreased in geriatric patients.

An intravenous induction agent is often administered prior to an inhalation anaesthetic to facilitate induction of anaesthesia and prevent the transient initial Central Nervous System excitation that may occur with some of the inhaled anaesthetics.

Premedication with atropine 300 to 600 µg by subcutaneous or intramuscular injection has been recommended to reduce vagal tone and to prevent bradycardia and severe hypotension.

Halothane is given using a vaporiser to provide close control over the concentration of inhaled vapour.

Anaesthesia may be induced with 2 to 4 % v/v of halothane in oxygen or mixtures of nitrous oxide and oxygen; induction may also be started at a concentration of 0,5% and increased gradually to the required level. For induction in children a concentration of 1,5 to 2% has been used. It takes up to about 5 minutes to attain surgical anaesthesia and there is little or no excitement in the induction period. The more usual practice is to induce anaesthesia with an intravenous agent. Anaesthesia is maintained with concentrations of 0,5 to 2,5 % v/v depending on flow rate used. Recovery, which is dependent on the concentration used and the duration of anaesthesia, is usually rapid. Shivering may occur during recovery; restlessness during this period is an indication for postoperative analgesia.

SIDE EFFECTS AND SPECIAL PRECAUTIONS:

Side-effects:

Halothane has a depressant action on the cardiovascular system and reduces blood pressure; signs of overdosage are bradycardia and profound hypotension. It is also a respiratory depressant and can cause cardiac arrhythmias; there have been instances of cardiac arrest. The sensitivity of the heart to sympathomimetic amines is increased.

Adverse effects on the liver range from liver dysfunction to hepatitis and necrosis and are more frequent following repeated use.

Halothane can produce nausea, vomiting, and shivering. Malignant hyperpyrexia has been reported.

Other adverse effects which may occur during general anaesthesia include involuntary muscle movements, hiccup, coughing, bronchospasm, laryngospasm, hypotension, and emergence reactions.

Special Precautions:

Halothane should be used with caution in patients with phaeochromocytoma.

The effects of competitive muscle relaxants such as gallamine and tubocurarine, and of ganglion blocking agents such as pentolinium, pempidine, and trimetaphan are enhanced by halothane and if required they should be given in reduced dosage. Morphine increases the depressant effects of halothane on respiration. Chlorpromazine also enhances the depressant effect of halothane.

Patients who are known or are suspected to be susceptible to malignant hyperpyrexia should not be anaesthetised with halothane or any of the other halogenated inhalational anaesthetics.

Halothane reduces muscle tone in the pregnant uterus and generally its use is not recommended in obstetrics because of the increased risk of postpartum haemorrhage; the effects of ergometrine on the parturient uterus are diminished.

Premedication with atropine has been recommended to reduce vagal tone and to prevent bradycardia and severe hypotension.

Patients with impaired function of the adrenal cortex, such as those who are being treated or have recently been treated with corticosteroids, may experience hypotension with the stress of anaesthesia. Treatment with corticosteroids, preoperatively and postoperatively, may be necessary.

Patients taking other forms of long-term medication may require a change of dosage or cessation of therapy before major elective surgery. Such medications include aspirin, oral anticoagulants, oestrogens, monoamine oxidase inhibitors, and lithium.

Patients with chronic diseases such as diabetes or hypertension may require adjustment to their therapy prior to anaesthesia. Anaesthetic agents should be used with caution in patients with cardiac, respiratory, renal, or hepatic impairment.

Sensitisation of the myocardium to beta-adrenergic stimulation occurs with some anaesthetics and ventricular fibrillation may occur if sympathomimetic agents are administered concomitantly.

KNOWN SYMPTOMS OF OVERDOSAGE AND PARTICULARS OF ITS TREATMENT:

See "Side-effects and special precautions" above.

Treatment is symptomatic and supportive.

IDENTIFICATION:

A clean, bright, colourless liquid with a characteristic odour.

PRESENTATION:

Bottle of 250 ml.

STORAGE INSTRUCTIONS:

Store in airtight containers protected from light at a temperature not exceeding 25 °C.

Keep out of reach of children.

REGISTRATION NUMBER:

F/2.1/9

NAME AND BUSINESS ADDRESS OF APPLICANT:

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