Legal mentions

Optivantage DH Contrast Media Injectors is a medical device intended for use by qualified healthcare professionals, it is a contrast delivery system and is designed to inject radiopaque contrast media into a patient's vascular system to obtain diagnostic images when used with computed tomography (i.e. "CT") equipment.
Ensure that injection from multi-dose containers and to more than one patient respects the valid rules of good practice and the marketing authorization (MA) of the contrast agent and local regulatory requirements.
Class IIb/CE
TÜV SÜD 0123
Manufacturer: Liebel-Flarsheim Company LLC
EC Rep: Guerbet

Optistar Elite Contrast Delivery System is a medical device intended for use by qualified healthcare professionals. It is intended to inject MR contrast media and flushing solutions into a patient's vascular system to obtain diagnostic images when used in conjunction with Magnetic Resonance (MR) Imaging equipment.
Class IIb/CE
TÜV SÜD 0123
Manufacturer: Liebel-Flarsheim Company LLC
EC Rep: Guerbet

For complete information about precautions and optimal usage conditions, we recommend consulting the instruction for use supplied with the device or by your local Guerbet representative(s). For use only in countries with applicable health authority registrations.

OPTIRAY™ is a sterile, non-pyrogenic, aqueous solution intended for intravascular and subarachnoid administration.

Composition:(*) OPTIRAY™ 160 Ioversol, 339 mg/ml, which is equivalent to 160 mg/ ml of organically bound iodine. OPTIRAY™ 240 Ioversol, 509 mg/ml, which is equivalent to 240 mg/ ml of organically bound iodine. OPTIRAY™ 300 Ioversol, 636 mg/ml, which is equivalent to 300 mg/ml of organically bound iodine. OPTIRAY™ 320 Ioversol, 678 mg/ml, which is equivalent to 320 mg/ml of organically bound iodine. OPTIRAY™ 350 Ioversol, 741 mg/ml, which is equivalent to 350 mg/ml of organically bound iodine.

Indications (*): OPTIRAY™ non-ionic X-ray contrast medium for diagnostic use only.

OPTIRAY™ 350 is indicated in adults for angiography, including intra-arterial, digital subtraction angiography (IA-DSA), throughout the cardiovascular system, except selective cerebral angiography. OPTIRAY™ 350 is also indicated for contrast enhanced computed tomographic imaging of the head and body, intravenous excretory urography, intravenous digital subtraction angiography and venography. OPTIRAY™ 350 is indicated in children for angiocardiography.

OPTIRAY™ 320 is indicated in adults for angiography, including digital subtraction angiography (DSA), throughout the cardiovascular system. The uses include but are not limited to cerebral, coronary, peripheral, visceral and renal arteriography, venography, aortography, and left ventriculography. OPTIRAY™ 320 is also indicated for contrast enhanced computed tomographic imaging of the head and body, and intravenous excretory urography. OPTIRAY™ 320 is indicated in children for angiocardiography, contrast enhanced computed tomographic imaging of the head and body, and intravenous excretory urography.

OPTIRAY™ 300 is indicated for cerebral, peripheral, and abdominal arteriography, including digital subtraction angiography (DSA), in adults. OPTIRAY™ 300 is also indicated for contrast enhanced computed tomographic imaging of the head and body, venography, and intravenous excretory urography. OPTIRAY™ 300 is indicated in children for cerebral, peripheral and abdominal angiography, including digital subtraction angiography (DSA), computed tomography of the head and body, and intravenous excretory urography.

OPTIRAY™ 240 is indicated for cerebral, peripheral, and abdominal angiography, including intra-arterial, digital subtraction angiography (IA-DSA), and venography in adults. OPTIRAY™ 240 is also indicated for contrast enhanced computed tomographic imaging of the head and body and intravenous excretory urography. OPTIRAY™ 240 is indicated in children for cerebral, peripheral and abdominal angiography, including digital subtraction angiography (DSA), computed tomography of the head and body, and intravenous excretory urography. OPTIRAY™ 240 is indicated for subarachnoid administration in adults for lumbar, thoracic and cervical myelography, in some countries.

OPTIRAY™ 160 is only indicated for intra-arterial digital subtraction angiography (IADSA) in adults.

Posology and Method of Administration (*): The dosage may vary between 1 ml and 150 ml, maximum total dose 250 ml or less depending on the indications, the composition of OPTIRAY, the patient's factors and other technical factors. **Please refer to the Summary of Product Characteristics for the recommended dosage schedule.**

Contraindications: Hypersensitivity to ioversol ot to any of the excipients. Manifest hyperthyroidism. **Special Warnings and Precautions for Use:** Diagnostic procedures which involve the use of iodinated intravascular contrast agents should be carried out under the direction of personnel skilled and experienced in the particular procedure to be performed. A fully equipped emergency cart, or equivalent supplies and equipment, and personnel competent in recognizing and treating adverse reactions of all types should always be available. Since severe delayed reactions have been known to occur, emergency facilities and competent personnel should be available for at least 30 to 60 minutes after administration. Preparatory dehydration is dangerous and may contribute to acute renal failure in patients with advanced vascular disease, diabetic patients and in susceptible nondiabetic patients (often elderly with pre-existing renal disease). Patients should be well hydrated prior to and following the administration of Optiray. The possibility of a reaction, including serious, life-threatening, fatal, anaphylactoid or cardiovascular reactions, should always be considered (See Adverse Reactions). Severe, life-threatening, systemic hypersensitivity reactions such as drug rash with eosinophilia and systemic symptoms (DRESS) have been reported in patients administered Optiray. Early or late manifestations of hypersensitivity, such as fever or lymphadenopathy, may be present even though rash is not evident. If such signs or symptoms are present, the patient should be evaluated immediately. Increased risk is associated with a history of previous reaction to a contrast medium, and known allergies (i.e., bronchial asthma, hay fever and food allergies) or hypersensitivities. The occurrence of severe idiosyncratic reactions has prompted the use of several pre-testing methods. However, pre-testing cannot be relied upon to predict severe reactions and may itself be hazardous to the patient. It is suggested that a thorough medical history with emphasis on allergy and hypersensitivity, prior to the injection of any contrast medium, may be more accurate than pre-testing in predicting potential adverse reactions. A positive history of allergies or hypersensitivity does not arbitrarily contraindicate the use of a contrast agent when a diagnostic procedure is thought essential, but caution should be exercised. Pre-medication with antihistamines or corticosteroids to avoid or minimize possible allergic reaction in such patients should be considered. Reports indicate that such pre-treatment does not prevent serious life-threatening reactions but may reduce both their incidence and severity. General anesthesia may be indicated in the performance of some procedures in selected patients. However, a higher incidence of adverse reactions has been reported in these patients and may be attributable to the inability of the patient to identify untoward symptoms or to the hypotensive effect of anesthesia. In angiographic procedures, the risk of dislodging plaques or damaging or perforating the vessel wall should be considered during catheter manipulations and contrast medium injection. Test injections to ensure proper catheter placement are suggested. Angiography should be avoided whenever possible in patients with homocystinuria because of the risk of inducing thrombosis and embolism. Patients with congestive heart failure should be observed for several hours following the procedure to detect delayed hemodynamic disturbances which may be associated with a transitory increase in the circulating osmotic load. About procedural risks, selective coronary arteriography should be performed only in selected patients and those in whom the expected benefits outweigh the procedural risk. The inherent risks of angiocardiography in patients with chronic pulmonary emphysema must be weighed against the necessity for performing this procedure. Caution during injection of a contrast medium is necessary to avoid extravasation. This is especially important in patients with severe arterial or venous disease. **Specific warnings related to Intravascular administration:** Caution must be exercised in patients

with hyperthyroidism or with an autonomously functioning thyroid nodule, severely impaired renal function, renal and hepatic disease, multiple myeloma or other paraproteinemia, anuria, pheochromocytoma, sickle cell disease and in neonates. Meticulous intravascular administration technique is necessary, particularly during angiographic procedures, to minimize thromboembolic events. **Specific warnings related to Subarachnoid administration:** Myelography should not be performed in the presence of significant local or systemic infection where bacteremia is likely or when lumbar or cervical puncture is contraindicated. Myelography should be performed only in hospitalized patients under close medical observation, which is to be continued for 24 hours following the procedure.

Gravitational displacement of a concentrated bolus of Optiray above the level of C1 and especially into the intracranial subarachnoid spaces is to be avoided. Caution must be exercised in patients with history of seizure, epilepsy and elderly patients. **Please refer to the Summary of Product Characteristics for complete information about specific warnings.**

Interactions with other medicinal products and other forms of interaction: With metformine, vasopressor and the results of protein-bound iodine (PBI) and radioactive iodine uptake studies, which depend on iodine estimation, will not accurately reflect thyroid function for up to 16 days following administration of iodinated contrast media. Please refer to summary of product characteristics. **Fertility, pregnancy and lactation:** There are no adequate and well controlled studies in pregnant women. This drug should be used during pregnancy only if clearly needed. Although it has not been established that adverse reactions occur in nursing infants, caution should be exercised when intravascular contrast media are administered to nursing women because of potential adverse reactions, and consideration should be given to temporarily discontinuing nursing.

Effects on ability to drive and use machines: There is no known effect on the ability to drive and operate machines. However, because of the risk of early reactions, driving or operating machinery is not advisable for 30 to 60 min following administration.

Undesirable effects:

Adverse reactions following the use of OPTIRAY™ **are generally independent of the dose** administered. Usually, they are mild to moderate, of short duration and resolve spontaneously (without treatment). However, even mild adverse reactions may be the first indication of a serious, generalized reaction that can occur rarely after iodinated contrast media. Such serious reactions may be life-threatening and fatal, and usually affect the cardiovascular system. Most adverse drug reactions to OPTIRAY™ formulations occur within minutes after administration, however, contrast related hypersensitivity reactions may occur with a delay of some hours up to several days. Injections of contrast media are very commonly associated with sensations of warmth, and commonly associated with pain.

Adverse reactions may be classified as follows: • Hypersensitivity or anaphylactoid reactions are mostly mild to moderate with symptoms like rash, pruritus, urticaria, rhinitis and blister. These symptoms may occur independent of dose and route of administration and may be the first signs of an evolving shock with symptoms like pronounced decrease in blood pressure, tachycardia, dyspnoea, pallor and decrease in consciousness. Fatal cases were reported. • Vasovagal reactions with symptoms ranging from dizziness and hypotension to syncope. Vasovagal reactions may be caused either by the contrast media or by the procedure. • Cardiologic side effects during cardiac catheterization may include ECG changes, arrhythmia, conductivity disorders as well as coronary spasm. Such reactions may be caused by the contrast media or by the procedure. • Nephrotoxic reactions with acute renal failure may occur in patients with pre-existing renal damage. • Neurotoxic reactions after intra-arterial injection of the contrast medium like confusion, visual disorders, convulsions or fits. The symptoms are generally transient and abate spontaneously within several hours. • Local reactions at the injection site may occur and include rashes, swelling, inflammation and edema. Such reactions occur probably in most cases due to extravasation of the contrast agent. Extended paravasation may necessitate surgical treatment. For subarachnoid administration: Any adverse reactions known to occur with the intravascular use of OPTIRAY™ can also occur during myelography, especially those which originate in the CNS. The most commonly observed adverse reaction was headache, which had an incidence of 8.6%.

Overdose: The adverse effects of overdosage are life-threatening and affect mainly the pulmonary and cardiovascular system. Treatment of an overdosage is directed toward the support of all vital functions and prompt institution of symptomatic therapy.

Pharmacological properties: Pharmacotherapeutic group: water-soluble, nephrotropic, low-osmolar X-ray contrast media ATC code: V08AB07.

Incompatibilities: No medicinal product should be mixed with OPTIRAY™.

Nature and content of container: (*) OPTIRAY™ is supplied in glass bottles and plastic pre-filled syringes.

Marketing authorization holder: (*) Information: Guerbet – BP 57400 – F-95943 Roissy CdG cedex - France. Tel: 33 (0) 1 45 91 50 00. Date of revision: 13/12/2020

For current and complete prescribing information refer to the local Summary of Product Characteristics (SmPC) and /or contact your local Guerbet organization.

(*) Marketing Authorization Information: The marketing authorization holder, number and date of approval may differ from one country to another. Volume, presentation, indication and Posology and Method of Administration may also differ.

Reporting of suspected adverse reactions is important as it helps to continuously assess the benefit-risk balance. Therefore, Guerbet encourages you to report any adverse reactions to your health authorities or to our local Guerbet representative.

DOTAREM 0.5 mmol/mL, solution for injection. **Composition:** For 100 mL of solution: active ingredient: Gadoteric Acid 27.932 g corresponding to: DOTA 20.246 g corresponding to gadolinium oxide 9.062 g. **Indications (*):** Medicinal product for diagnostic use only: Magnetic Resonance Imaging for cerebral and spinal disease, diseases of the vertebral column, and other whole-body pathologies (including angiography). Dotarem should be used only when diagnostic information is essential and not available with unenhanced magnetic resonance imaging (MRI). **Posology and method of administration:** The recommended dose is 0.1 mmol/kg, i.e. 0.2 mL/kg in adults and children. The lowest dose that provides sufficient enhancement for diagnostic purposes should be used. The dose should be calculated based on the patient's body weight, and should not exceed the recommended dose per kilogram of body weight detailed in this section. In angiography, depending on the results of the examination being performed, a second injection may be administered during the same session if necessary. Angiography with Gadoteric acid is not recommended in children (0-18 years). In Encephalic and spinal MRI, in some exceptional cases, as in the confirmation of isolated metastasis or the detection of leptomeningeal tumours, a second injection of 0.2 mmol/kg may improve tumor characterisation and facilitate therapeutic decision making. For patients with impaired renal function and paediatric population (0-18 years) more than one dose should not be used during a scan, injections should not be repeated unless the interval between injections is at least 7 days. The product must be administered by strict intravenous injection. Depending on the amount of gadoteric acid to be given to the child, it is preferable to use gadoteric acid vials with a single use syringe of a volume adapted to this amount in order to have a better precision of the injected volume. In neonates and infants the required dose should be administered by hand. **Contraindications:** Hypersensitivity to gadoteric acid, to meglumine or to any medicinal products containing gadolinium. **Special warnings and precautions for use:** Dotarem must not be administered by subarachnoid (or epidural) injection. The usual precaution measures for MRI examination should be taken such as exclusion of patients with pacemakers, ferromagnetic vascular clips, infusion pumps, nerve stimulators, cochlear implants

or suspected intracorporal metallic foreign bodies, particularly in the eye. **General particulars corresponding to all gadolinium contrast agents:** All gadolinium based contrast media can cause minor or major hypersensitivity reactions that can be life-threatening. These can occur immediately (within 60 minutes) or be delayed (within 7 days) and are often unpredictable. Because of the risk of major reactions, emergency resuscitation equipment should be available for immediate use. Hypersensitivity reactions can be aggravated in patients on betablockers and particularly in the presence of bronchial asthma. These patients may be refractory to standard treatment of hypersensitivity reactions with beta agonists. Impaired renal function: Prior to administration of gadoteric acid, it is recommended that all patients are screened for renal dysfunction by obtaining laboratory tests. There have been reports of Nephrogenic Systemic Fibrosis (NSF) associated with use of some gadolinium-containing contrast agents in patients with severe renal impairment (GFR < 30 ml/min/1.73 m2). As there is a possibility that NSF may occur with Dotarem, it should only be used in these patients after careful consideration. CNS disorders: As with other contrast agents containing gadolinium, special precautions should be taken in patients with a low seizure threshold. Precautionary measures, e.g. close monitoring, should be taken. All equipment and drugs necessary to counter any convulsions which may occur must be made ready for use beforehand. **Interactions with other medicinal products and other forms of interaction:** No interactions with other medicinal products have been observed. Formal drug interaction studies have not been carried out. **Fertility**, **pregnancy and lactation:** Gadoteric acid should not be used during pregnancy unless the clinical condition of the woman requires use of gadoteric acid. Continuing or discontinuing breast feeding for a period of 24 hours after administration of gadoteric acid, should be at the discretion of the doctor and lactating mother. **Effects on ability to drive and use machines:** No studies on the effects on the ability to drive and use machines have been performed. Ambulant patients while driving vehicles or operating machinery should take into account that nausea may incidentally occur. **Undesirable effects:** Uncommon (≥1/1000 to <1/100): hypersensitivity, headache, dysgeusia, dizziness, somnolence, paraesthesia (including burning sensation), hypotension, hypertension, nausea, abdominal pain, rash, feeling hot, feeling cold, asthenia, injection site reactions (extravasation, pain, discomfort, oedema, inflammation, coldness). Rare (≥1/10 000 to <1/1 000): anxiety, presyncope, eyelid edema, palpitations, sneezing, throat tightness, vomiting, diarrhea, salivary hypersecretion, Urticaria, pruritus, hyperhidrosis, chest pain, chills. Very rare (<1/10 000): anaphylactic reaction, anaphylactoid reaction, agitation, coma, convulsion, syncope, tremor, parosmia, conjunctivitis, ocular hyperaemia, vision blurred, lacrimation increased, tachycardia, cardiac arrest, arrhythmia, bradycardia, flushing, pallor, vasodilatation, hot flush, cough, dyspnoea, nasal congestion, respiratory arrest, bronchospasm, throat irritation, laryngospasm, pharyngeal oedema, dry throat, pulmonary oedema, erythema, angioedema, eczema, muscle cramps, muscular weakness, back pain, arthralgia, malaise, chest discomfort, pyrexia, face oedema, injection site necrosis (in case of extravasation), phlebitis superficial, decreased oxygen saturation, Not known : nephrogenic systemic fibrosis. **Overdose:** Gadoteric acid can be removed by haemodialysis. However there is no evidence that haemodialysis is suitable for prevention of nephrogenic systemic fibrosis. **Please note:** The peel-off tracking label on the vials or syringes should be stuck onto the patient record to enable accurate recording of the gadolinium contrast agent used. The dose used should also be recorded. If electronic patient records are used, the name of the product, the batch number and the dose should be entered into the patient record. **Pharmacological properties**: Pharmacotherapeutic group: paramagnetic contrast media for MRI, ATC code: V08CA02. **Presentation (*):** 5, 10, 15, 20, 60 & 100 mL in vial (glass) and 10, 15 & 20 mL in a prefilled syringe (glass). **Marketing authorization holder: (*) Information:** Guerbet - BP 57400 - F-95943 Roissy CdG cedex – FRANCE. Tel: 33 (0) 1 45 91 50 00. **Date of revision of this document**: February 2018

For current and complete prescribing information refer to the package insert and/or contact your local Guerbet organization.

(*) Indications, presentations and marketing authorization holder may differ from country to country.

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