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Due to regulatory changes, the content of the following Patient Information Leaflet may vary from the one found in your medicine pack. Please compare the 'Leaflet prepared/revised date' towards the end of the leaflet to establish if there have been any changes.

If you have any doubts or queries about your medication, please contact your doctor or pharmacist.

Package leaflet: Information for the patient**UROGRAFIN®****Sodium amidotrizoate (sodium diatrizoate) and meglumine amidotrizoate (meglumine diatrizoate)**

Read all of this leaflet carefully before you are given this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask the doctor giving you Urografin (the radiologist) or the X-ray department staff.
- If you get any side effects, talk to your doctor or the X-ray department staff/radiologist. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

1. What Urografin is and what it is used for
2. What you need to know before you are given Urografin
3. How you will be given Urografin
4. Possible side effects
5. How to store Urografin
6. Contents of the pack and other information

1. What Urografin is and what it is used for

Urografin is an injectable contrast medium (a dye) which contains iodine. It is used to clearly show on X-rays the area of your body that your doctor wants to investigate.

X-rays, like radio waves, can pass through objects and can be focused to make a picture. When you have an X-ray, the beam of rays goes through your body where it is absorbed to differing degrees by different tissues such as bones, muscles and organs. When the rays come out on the other side they make a pattern of light and shade on a film. Urografin helps to make this pattern clearer. The film is then examined by a specialist who will make a diagnosis.

This medicine is for diagnostic use only.

2. What you need to know before you are given Urografin

Do not use Urografin

- if you are allergic to sodium amidotrizoate, meglumine amidotrizoate, iodine or iodine-containing contrast media or any of the other ingredients of this medicine (listed in section 6)
- if you have a condition caused by too much thyroid hormone (uncontrolled thyrotoxicosis)
- if you have severe heart insufficiency (causing oedema (swelling of areas of your body e.g. ankles) or shortness of breath)
- if you are pregnant or have inflammation of the pelvic cavity (symptoms include stomach pain and tenderness, fever and irregular menstrual periods): you must not have your uterus (womb) investigated with Urografin.

Warnings and precautions

Talk to your doctor or the X-ray department staff/radiologist before receiving Urografin

You must tell the X-ray department staff if you have any of the following:

- reduced liver or kidney function
- epilepsy or a history of seizures
- a disease of blood vessels in the brain (cerebral arteriosclerosis)
- diabetes mellitus requiring treatment and/or associated with diabetic complications
- damaged lungs (pulmonary emphysema)
- poor general health
- or are suspected to have an overactive thyroid gland (hyperthyroidism) or a swollen neck due to an enlarged thyroid gland (benign nodular goitre) as iodinated contrast media may in this situation induce hyperthyroidism and thyrotoxic crisis (severe complication of an overactive thyroid)
- a disease of the bone marrow (multiple myeloma)
- a history of allergy or a tendency to develop hypersensitivity reactions (for example if you have hay fever, asthma or eczema), especially if you have taken a medicine like Urografin (a contrast medium) before
- poor heart function or blood circulation
- previously had a reaction to any contrast media.

If any of these apply to you, you may be at a higher risk of having an allergic reaction or becoming unconscious/fainting.

If you have a phaeochromocytoma (tumour of the adrenal gland) you may be given a medicine called an alpha-receptor blocker before the investigation to prevent your blood pressure from rising.

Your thyroid function may be tested before receiving Urografin and you may be given thyreostatic medication (medication to reduce thyroid gland function).

Your doctor will test the thyroid function of newborns who have been exposed to Urografin either during pregnancy or after birth, because too much iodine can cause hypothyroidism (underactive thyroid gland), possibly requiring treatment.

Other medicines and Urografin

Tell your doctor or the X-ray department staff/radiologist if you are taking, have recently taken or might take any other medicines. This is particularly important for:

- beta-blockers (drugs used to treat heart or blood pressure), because they can make allergic reactions worse

- if you have been treated with a drug called interleukin, because there is a higher chance of getting delayed reactions (e.g. fever flu-like symptoms, joint pain and pruritus (itching))
- if you have kidney disease due to diabetes (diabetic nephropathy) and are taking a type of medicine called biguanides (metformin). You should inform your doctor who will probably stop the biguanides 48 hours before the examination.

Ask the X-ray department staff if you are not sure.

Urografin with food and drink

If the procedure is to look at your abdomen, kidneys or bladder you may be asked to avoid foods that cause flatulence (wind) for two days beforehand. These foods include:

- peas, beans, lentils, salads, fruit
- brown or granary bread
- all kinds of uncooked vegetables.

You will be told not to eat after 6pm on the day before the examination, but you can still drink. Babies and young children, however, must not fast. If you have a disorder of your body water and body salts balance this will be corrected before the examination.

Do not reduce the amount you normally drink before the investigation, especially if you have any of the following:

- multiple myeloma (disease of the bone marrow)
- diabetes mellitus
- polyuria (production of large amounts of urine which is pale in colour)
- oliguria (production of small amounts of urine)
- gout.

Also, fluid intake must not be reduced in babies, young children, or in someone who is in a very poor general state of health where their body tissues are wasting away.

Pregnancy and breast-feeding

If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask the doctor or X-ray department staff /radiologist for advice before receiving this medicine.

Driving and using machines

You should not drive or operate machinery for 24 hours after the examination as you may have a delayed reaction to Urografin.

Urografin contains sodium

This medicine contains 362.50 mg of sodium (main component of cooking salt) in each dose (250 ml). This is equivalent to 18.1% of the recommended maximum daily dietary intake of sodium for an adult.

3. How you will be given Urografin

The X-ray department staff will decide how much Urografin is needed for your particular investigation. They will explain how everything works and what position you should lie in on the X-ray table.

The dose of Urografin varies depending on the investigation and your weight. The dose range is normally between 1 and 500 ml.

Once you lie down the Urografin will be injected into a vein. Sometimes, Urografin will be injected into your muscles or anus (back passage). The staff in the X-ray department will observe you for 30 minutes after the injection just in case you have any side effects.

If you receive more Urografin than you should

Overdosing is unlikely. If it does happen the radiologist will treat any symptoms that follow.

If you have any further questions on the use of this medicine, ask your doctor or the X-ray department staff/radiologist for advice before receiving this medicine.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

Side effects you may get after being given a contrast medium like Urografin are usually mild and do not last long.

However, as with similar contrast media, severe and life-threatening reactions, as well as deaths, have been reported.

If you notice:

- itching of the skin, rash, wheals on the skin (urticaria)
- difficulty breathing, gagging, feeling of suffocation
- swelling of the face, neck or body
- itchy or watery eyes, tickling in the throat or nose, hoarseness, coughing or sneezing
- headache, dizziness, feeling faint
- feeling particularly hot or cold, sweating
- paleness or reddening of the skin
- chest pain, cramp, tremor
- feeling sick

Tell the radiologist or X-ray staff immediately as these may be the first signs of allergic reaction or shock. Your investigation will need to be stopped, and you may need further treatment.

Apart from the symptoms listed above the other possible side effects of Urografin are:

- feeling sick or being sick
- a sensation of pain and a general feeling of warmth
- in rare cases your kidneys temporarily stop working
- reddening or other reactions at the injection site if Urografin is not injected properly.

Very rarely severe or even life-threatening side-effects may occur and in some cases have been fatal. These include:

lowered blood pressure

fainting (collapse)

circulatory failure

an irregular, rapid heart beat which may cause the heart to suddenly stop beating altogether (cardiac arrest)

fits or other brain related symptoms

a build-up of water in the air spaces of the lung

anaphylactic shock (a very severe allergic reaction).

If you are having a procedure where Urografin will reach the brain, you may have complications such as:

- coma, temporary confusion and drowsiness
- temporary weakness of the muscles
- disturbed vision or weakness of the facial muscles
- epileptic fits, especially in someone with epilepsy or brain damage.

Delayed reactions can occasionally occur, if you are concerned you should contact your doctor.

Reporting of side effects

If you get any side effects, talk to your doctor, radiologist or X-ray department staff. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the Yellow Card Scheme at: www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store. By reporting side effects you can help provide more information on the safety of this medicine.

5. How to store Urografin

Keep this medicine out of the sight and reach of children.

Do not use Urografin after the expiry date which is stated on the label and carton after EXP. The expiry date refers to the last day of that month.

Protect from light and secondary X-rays.

6. Contents of the pack and other information

What Urografin contains

- The active substances are sodium amidotrizoate and meglumine amidotrizoate.

1 ml Urografin 150 contains 40 mg sodium amidotrizoate and 260 mg meglumine amidotrizoate.

1 ml Urografin 150 for infusion contains 40 mg sodium amidotrizoate and 260 mg meglumine amidotrizoate.
- The other ingredients are sodium calcium edetate (E 385) and water for injections.

What Urografin looks like and contents of the pack

Urografin 150 is available in packs of ten 10 ml ampoules or packs of ten 20 ml ampoules.

Urografin 150 for infusion is available in 250 ml or 500 ml bottles.

Marketing Authorisation Holder and Manufacturer

Marketing Authorisation Holder: Bayer plc
400 South Oak Way
Reading
RG2 6AD

Manufacturer: BerliMed S.A
Madrid
Spain

This leaflet was last revised in October 2018.

To listen to or request a copy of this leaflet in Braille, large print or audio please call, free of charge:

0800 198 5000 (UK only)

Please be ready to give the following information:

Product name	Reference number
Urografin 150	00010/0569
Urografin 150 for Infusion	00010/0568

This is a service provided by the Royal National Institute of the Blind.



The following information is intended for healthcare professionals only:

Information for Healthcare Professionals

UROGRAFIN®

Composition, availability and viscosity

The Urografin range contains sodium and meglumine amidotrizoate in various ratios. The numerical suffix gives the approximate iodine concentration of the medium (see table 1).

1ml Urografin 150 contains 40mg sodium amidotrizoate and 260mg meglumine amidotrizoate.

Excipients: Sodium calcium edetate (E Number 385), water for injection.

Table 1

Medium	Ratio of sodium: meglumine amidotrizoate	Exact iodine concentration mg/ml	Availability	Iodine content (g) per container	Viscosity (cp)	
					20°C	37°C
Urografin 150	10:66	146	10ml ampoule	1.46	2.2	1.4
			20ml ampoule	2.92		
			250ml infusion bottle	36.5		
			500ml infusion bottle	73.0		

Package quantities

Urografin 150: Packs of 10x10ml ampoules and 10x20ml ampoules.

Urografin 150 for infusion: Packs of 1x250ml bottles and 1x500ml bottles.

Urografin is a contrast medium.

The product licence is held by: Bayer plc
400 South Oak Way
Reading
RG2 6AD

Product licence numbers Urografin 150 (30%) 00010/0569
Urografin 150 (30%) for infusion 00010/0568

Urografin is manufactured by: BerliMed S.A., Madrid, Spain.

Uses

X-ray contrast medium for the delineation of the vascular and renal systems.

Contra-indications

Proven or suspected hypersensitivity to iodine-containing contrast media, uncontrolled thyrotoxicosis and decompensated cardiac insufficiency.

Hysterosalpingography must not be carried out during pregnancy or in patients with acute inflammatory conditions in the pelvic cavity.

Warnings

For patients with severe impairment of hepatic or renal function, cerebral arteriosclerosis, epileptic conditions, diabetes mellitus requiring drug treatment and/or associated with diabetic complications, pulmonary emphysema, poor general health, latent hyperthyroidism, multiple myeloma or benign nodular goitre the need for examination with an X-ray contrast medium merits careful consideration.

This also applies to patients with a history of allergy, atopy, bronchial asthma, endogenous eczema, cardiac or circulatory insufficiency or a previous adverse reaction with any contrast medium since experience shows that they may be at higher risk from developing anaphylaxis or cardiovascular collapse. Consideration should be given to the use of a low osmolar radiopaque contrast medium in such patients.

The patient should be recumbent during the administration of Urografin. Thereafter, the patient must be kept under close observation for at least 30 minutes, since about 90% of all severe incidents occur within that time. If the administration does not take place on the X-ray table, any patient with a labile circulation should be brought to the X-ray machine sitting or lying down.

Particular caution should be exercised in allergic persons who have previously tolerated an injectable iodine-containing contrast medium without any complication because they may have become sensitised to these substances in the meantime.

As with any contrast medium, the possibility of hypersensitivity must always be considered. If marked side-effects or suspected allergic reactions occur during injection and do not disappear, or even get worse, when the injection is briefly interrupted, it is probable that the patient is hypersensitive and the investigation must be abandoned. Even relatively minor symptoms such as itching of the skin, sneezing, violent yawns, tickling in the throat, hoarseness or attacks of coughing may be early signs of a severe reaction and, therefore, merit careful attention.

Ionic iodinated contrast media inhibit blood coagulation in vitro more than non-ionic contrast media. Nevertheless medical personnel performing vascular catheterisation procedures should pay meticulous attention to the angiographic technique and catheter flushing so as to minimise the risk of procedure-related thrombosis and embolisation.

In patients with multiple myeloma, diabetes mellitus requiring drug treatment, polyuria, oliguria or gout, and in infants, young children and marasmic patients the fluid supply should not be restricted. Existing disturbances of the balance of water and electrolytes must be corrected before the administration of a hypertonic contrast-medium solution.

Premedication with an alpha-blocker is recommended in patients with phaeochromocytoma, because of the risk of hypertensive crisis.

Particularly careful risk-benefit assessment is required in patients with known or suspected hyperthyroidism or goitre, as iodinated contrast media may interfere with thyroid function, aggravate or induce hyperthyroidism and thyrotoxic crisis.

Testing of thyroid function prior to Urografin administration and/or preventive thyreostatic medication may be considered in patients with known or suspected hyperthyroidism.

In neonates, especially preterm infants, who have been exposed to Urografin, either through the mother during pregnancy or in the neonatal period, it is recommended to monitor thyroid function, as an exposure to excess iodine may cause hypothyroidism, possibly requiring treatment.

Experience shows that pronounced states of excitement, anxiety and pain can be the cause of side effects or intensify contrast medium-related reactions. They can be counteracted by calm management of the patient and the use of suitable drugs.

Pregnancy and lactation

X-ray examinations should if possible be avoided during pregnancy. It has not yet been proved beyond question that Urografin may be used without hesitation in pregnant patients. Therefore, an examination with a contrast medium during pregnancy should be carried out only if considered absolutely necessary by the physician.

Renally eliminated contrast media such as Urografin enter the breast milk in only very small amounts.

Limited data suggest that the risk to the suckling infant of administering salts of diatrizoic acid to its mother is low.

Drug Interactions

Diabetic nephropathy may predispose to renal impairment following intravascular contrast medium administration. This may precipitate lactic acidosis in patients who are taking biguanides. As a precaution, biguanides should be stopped 48 hours prior to the contrast medium examination and reinstated only after adequate renal function has been regained.

Hypersensitivity reactions can be aggravated in patients on beta-blockers.

The prevalence of delayed reactions (e. g. fever, rash, flu-like symptoms, joint pain and pruritus) to contrast media is higher in patients who have received interleukin.

Incompatibilities

Some radiologists give an antihistamine or a corticoid prophylactically to patients with a history of allergy. However, because of the possibility of precipitation, the X-ray contrast medium and prophylactic agents must not be administered mixed together.

Effects on ability to drive and to use machines

Delayed reactions following intravascular administration of iodinated contrast media are rare. Nevertheless, driving or operating machinery is not advisable for the first 24 hours.

Dosage and administration

1. Adults only

Table 2 shows the medium that the license holder suggests for each investigation. This medium may be used at the discretion of the radiologist for other established permutations of medium and examination which, for the sake of simplicity, have been omitted from the table.

Table 2

Examination	Dose regimen
Drip-infusion urography	2-4ml/kg body wt up to 250ml
Retrograde urography	5-10ml
Cystography	Up to 500ml

Other indications include: high dose urography, pelvic venography, venacavography, arthrography, selective visceral angiography, limb venography, jugular venography, vesiculography, sialography, sinusography, amniography, lymphangiography, intramuscular urography, operative and percutaneous cholangiography, fistulography, oesophageal and anal atresia.

Urografin medium is not suitable for myelography.

Urodynamic studies

Urografin 150 (a 30% solution) can be diluted with normal saline to obtain the desired density.

The pH is not significantly affected by dilution.

- Retrograde urography

A 30% solution (Urografin 150) is generally sufficient for retrograde urography. It is advisable to warm the contrast medium to body temperature to avoid low-temperature stimulus and resultant ureteric spasms.

- Infusion urography

The rapid infusion of large amounts of a contrast medium in low concentration produces increased urine formation while retaining a high concentration of the contrast medium in the urine.

This method can provide complete visualisation of the renal pelvis and calyces as well as the entire course of the ureters. The nephrographic effect is also intensified, and is prolonged for up to 15-30 minutes after the termination of the infusion.

- Drip infusion urography

Dosage of Urografin 150 should not exceed 4ml/kg body weight.

3. General

In the case of abdominal angiography and urography, the diagnostic yield is increased if the bowels are emptied of faecal matter and gas. On the two days prior to the examination, patients should therefore avoid flatulent food, in particular peas, beans and lentils, salads, fruit, brown or granary bread and all kinds of uncooked vegetables. On the day before examination, patients should refrain from eating after 6pm. Moreover, it can be appropriate to administer a laxative in the evening.

The patient must attend for examination fasting but adequately hydrated. Disorders of the water and electrolyte balance must be corrected. This applies in particular to patients who are predisposed to such disturbances.

In babies and young children, however, prolonged fasting and the administration of a laxative before the examination are contraindicated.

Intravascular administration of the contrast medium should, if possible, be done with the patient lying down. After the administration, the patient should be kept under observation for at least 30 minutes, since experience shows that the majority of all severe incidents occur

within this time. If the administration does not take place on the X-ray table, any patient with a labile circulation should be brought to the X-ray machine sitting or lying down.

Experience shows that contrast medium is tolerated better if it is warmed to body temperature.

The contrast medium solution should not be drawn into the syringe or the infusion bottle attached to the infusion set until immediately before the examination.

Vials containing contrast medium solutions are not intended for the withdrawal of multiple doses. The rubber stopper should never be pierced more than once. The use of cannulas with a long tip and a maximum diameter of 18G is recommended for piercing the stopper and drawing up the contrast medium (dedicated withdrawal cannulas with a side hole, e.g. Nocore-Admix cannulas, are particularly suitable).

Contrast medium not used in one investigation must be discarded.

If diagnostic clarification necessitates several high single doses, the patient should be given the opportunity between injections to compensate for the increased serum osmolality by the influx of interstitial fluid.

To achieve this, a period of 10-15 minutes is necessary in adequately hydrated patients. The intravascular administration of water and electrolytes is indicated if more than 300ml contrast medium are required for a single examination.

- **Filming times after injection**

The renal parenchyma can be demonstrated best when the film is taken immediately after the end of the administration.

For visualisation of the renal pelvis and urinary tract, the first film is taken 3-5 and the second 10-12 minutes after the administration of the contrast medium. The earlier time should be chosen for younger patients and the later time for older patients.

In babies and young children it is advisable to take the first film as early as about 2 minutes after the administration of the contrast medium.

Insufficient contrast can necessitate later films.

Overdosage

Acute symptoms of poisoning are unlikely with intravascular administration. On inadvertent overdosage or in greatly impaired renal function, the contrast medium may be removed by dialysis, and the balance of water and electrolytes should be corrected.

Acute toxicity studies do not suggest a risk of acute intoxication.

Side effects

Mild subjective symptoms, such as a feeling of heat and nausea, occur very seldom and disappear rapidly when the injection is slowed down or briefly interrupted. Transient pain may occur, in particular during the examination of peripheral vascular regions.

Other symptoms which may occur are:

Chills, fever, sweating, headache, dizziness, blanching, weakness, gagging and a feeling of suffocation, gasping, a rise or fall of blood pressure, itching, urticaria, other kinds of skin eruption, oedema, cramp, tremor, sneezing and lacrimation. These reactions, which can occur irrespective of the amount administered and the mode of administration, may be the first signs of incipient shock. Administration of the contrast medium must be discontinued immediately and - if necessary - specific therapy instituted intravenously. It is therefore advisable to use a flexible indwelling cannula for intravenous contrast medium administration.

Very rarely, severe or even life-threatening side-effects such as severe hypotension and collapse, circulatory failure, ventricular fibrillation, cardiac arrest, pulmonary oedema, anaphylactic shock or other allergic manifestations, convulsions, or other cerebral symptoms may occur. In some cases these have proved fatal.

To permit immediate countermeasures to be taken in emergencies, appropriate drugs, an endotracheal tube and a ventilator should be ready to hand.

Experience shows that hypersensitivity reactions occur more frequently in patients with an allergic disposition.

Paravascular administration of the contrast medium rarely leads to severe tissue reactions.

Delayed reactions can occasionally occur.

Neurological complications such as coma, temporary states of confusion and somnolence, transient paresis, disturbed vision or facial muscle paresis and epileptic fits may occur after cerebral angiography and other procedures in which the contrast medium reaches the brain with the arterial blood. In very rare cases the induction of fits has been observed after intravenous administration of Urografin in epileptics and patients with focal brain damage. However, a causal relationship seems to be questionable.

Temporary renal failure may occur in rare cases.

Suggestions for the treatment of contrast medium incidents

It is very important in order to be able to take prompt action in the event of contrast medium incidents to have all drugs and instruments for emergency therapy readily available and to be familiar with the practice of emergency measures. Please refer to the Royal College of Radiologists guidelines "Advice on the management of reactions to intravenous contrast media".

Expiry date: The expiry date is printed on the label. The contrast medium should not be used after this date.

Storage: Protect from light and X-rays.

Date of last revision of this leaflet: October 2018