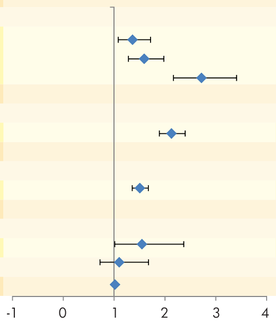
Risk factors for immediate ADRs

- Iohexol, iopamidol and iopromide were associated with increased risk of immediate ADRs compared with **XENETIX®**
- The performance of multiple contrasted CT examinations per day, female sex and 20-50 years age range were risk factors for immediate ADRs

Risk estimation associated with immediate ADRs

	Odds ratio (95% confidence interval)	p-value
Types of RCMs		
XENETIX®		
Iohexol	1.362 (1.081-1.717)	0.009
Iopamidol	1.592 (1.281-1.978)	<0.001
Iopromide	2.718 (2.167-3.409)	<0.001
Types of CT		
Single CT		
Multiple CT	2.129 (1.890-2.397)	<0.001
Gender		
Male		
Female	1.505 (1.355-1.672)	<0.001
Age (year)		
0-19		
20-50	1.548 (1.012-2.369)	0.044
50>	1.100 (0.722-1.676)	0.656
Body weight	1.017 (1.013-1.022)	<0.001

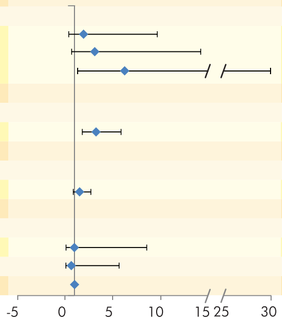


Risk factors for anaphylaxis

- Iopromide increased the risk of anaphylaxis compared with **XENETIX®**
- Multiple contrasted CT examinations per day was associated with a higher incidence of anaphylaxis

Risk estimation associated with anaphylaxis

	Odds ratio (95% confidence interval)	p-value
Types of RCMs		
XENETIX®		
Iohexol	1.944 (0.392-9.646)	0.416
Iopamidol	3.115 (0.683-14.200)	0.142
Iopromide	6.238 (1.322-29.443)	0.021
Types of CT		
Single CT		
Multiple CT	3.256 (1.810-5.858)	<0.001
Gender		
Male		
Female	1.533 (0.866-2.713)	0.142
Age (year)		
0-19		
20-50	0.987 (0.114-8.546)	0.990
50>	0.670 (0.079-5.663)	0.713
Body weight	1.011 (0.987-1.035)	0.390



Conclusion

The incidence of immediate ADRs varied according to the low-osmolar non-ionic CM used. XENETIX® was associated with fewer immediate ADRs compared with other CMs, whereas iopromide was associated with the highest incidence of ADRs.

Multiple CT examinations per day resulted in a higher incidence of immediate ADRs and anaphylaxis than a single CT examination.

Clinicians should consider these risk differences of immediate ADRs when prescribing CT examinations.

XENETIX®

It is a non-ionic monomeric, iodinated contrast agent associated with stabilized hydrophilicity, low osmolality, low viscosity and high water solubility. It is used in radiological examinations, and particularly in CT.

XENETIX® is supplied in 2 different concentrations: 300 and 350 mgI/mL.

- It is one of the latest non-ionic monomeric LOCMs available, and the only agent with a unique chemical structure designed for stabilized hydrophilicity, which may offer the safety advantage of being less likely to interact with proteins in cell membranes or plasma.

XENETIX® is approved in more than 60 countries.

XENETIX® is available in two different delivery systems: vials and **ScanBag®**.

ScanBag®

It is soft, light, resistant to tears and breakages, simple to use, safe to handle, practical and designed to achieve strict aseptic injection conditions. It also reduces storage and space wastage, assures transport safety and is compatible with most of the marketed automatic injectors.

ScanBag® is an environmental friendly packaging causing 40% less impact on the environment compared with glass bottles.*

ScanBag® is the first bag developed specifically for medical imaging, providing an innovative delivery method with the following advantages:

*P.Schiesser, Comparative LCA for glass Vial and **ScanBag®** with the single environmental score: a simplified way to understand improvements, AVNIR 2013

- **Overbag designed to provide** an optimal shelf life
- **Notch** for an easy opening
- **Practical wide and resistant hole** to hang the pouch bag easily
- **Rounded angles** for safe handling
- **Transparent material for product visibility** to allow visual control of the solution
- **Inert and ecological material:** polypropylene (PP)
- **V-shaped neck** to facilitate the air purge and eliminate residual volume
- **PP tubing** inert and ecological material
- **Sealed safety system**
- **Standard female Luer Lock connector**

Guerbet
Contrast for Life

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XENETIX®

Iobitridol

Does immediate adverse drug reaction incidence vary across different low-osmolar non-ionic contrast media?

Varied incidence of immediate reactions to low-osmolar non-ionic iodide radiocontrast media used in computed tomography. Kim SR, Lee JH, Park KH, et al. Clin Exp Allergy. 2017;47:106-112.

Guerbet

COMMITTED

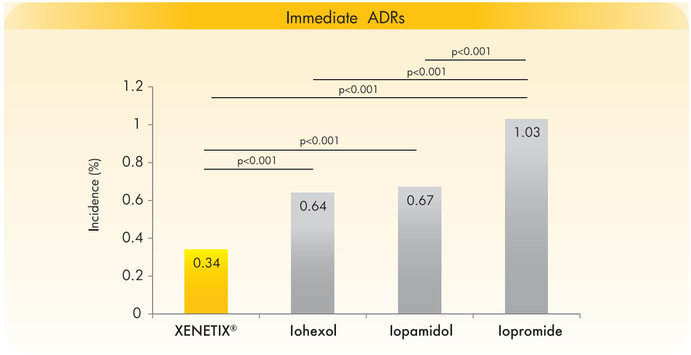
Results

Symptoms of immediate ADRs

- Rash (85.3%) and itching sensation (59.8%) were the most frequent symptoms, followed by nausea and vomiting (6.8%), dyspnoea (4.8%), dizziness (2.5%), general weakness (1.9%), chest discomfort (1.4%), œdema (1.2%), and hypotension (1.2%)
- 68 cases (0.024%) were classified as anaphylaxis

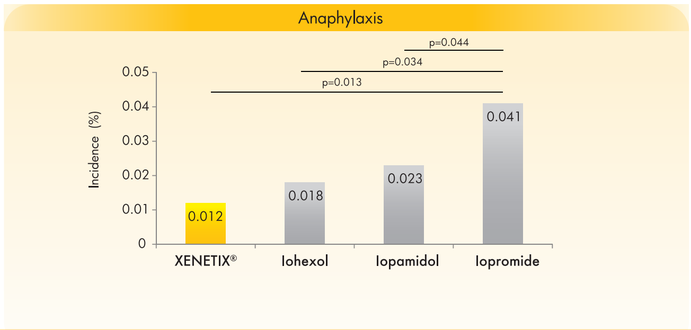
Incidence of immediate ADRs

- **XENETIX®** demonstrated the lowest incidence of immediate ADRs, followed by iohexol, iopamidol and iopromide



Incidence of anaphylaxis

- Iopromide had the highest incidence of anaphylaxis, statistically different from other products
- No significant difference was found among **XENETIX®**, iopamidol and iohexol



Xenetix® 350, solution for injection (350 mgI/ml) ; **Xenetix® 300**, solution for injection (300 mgI/ml) ; **Xenetix® 250**, solution for injection (250 mgI/ml) – **Composition per 100 ml** : **Xenetix® 350** : 76.78 g of iobitridol (corresponding to 35 g of iodine), **Xenetix® 300** : 65.81 g of iobitridol (corresponding to 30 g of iodine), **Xenetix® 250**: 54.84 g of iobitridol (corresponding to 25 g of iodine) — **Indications(**)**: this product is for diagnostic use only. **Contrast agent for use in**: **Xenetix® 350** intravenous urography, computed tomography, intravenous digital substraction angiography, arteriography, angiocardiography – **Xenetix® 300**: intravenous urography, computed tomography, intravenous digital substraction angiography, arteriography, angiocardiography, endoscopic retrograde cholangiopancreatography, arthrography, hysterosalpingography – **Xenetix® 250**: phlebography, computed tomography, intra-arterial digital substraction angiography, endoscopic retrograde cholangiopancreatography – **Posology and method of administration(*)**: the doses should be adapted to the examination and the territories intended to be opacified, as well as to the weight and renal function of the subject, particularly in children – **Contraindications(*)**: hypersensitivity to iobitridol or any of the excipients, history of major immediate or delayed skin reaction (see undesirable effects) to Xenetix®, manifest thyrotoxicosis, hysterosalpingography during pregnancy. – **General comments for all iodinated contrast agents (*)**: in the absence of specific studies, myelography is not an indication for Xenetix®. All iodinated contrast media can cause minor or major reactions that can be life-threatening. They may 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. – **Precautions for use(*)**: intolerance to iodinated contrast agents, renal insufficiency, hepatic insufficiency, asthma, dysthyroidism, cardiovascular diseases, central nervous system disorders, pheochromocytoma, myasthenia: **Interaction with other medicinal products and other forms of interaction(*)** – beta-blocker substances, diuretics, metformin, radiopharmaceuticals, interleukin II – Fertility, p**regnancy and lactation (*)** – **Undesirable effects(*)**: hypersensitivity , anaphylactic reaction, anaphylactoid reaction, anaphylactic shock, angioedema, urticaria, erythema, pruritus, eczema, acute generalized exanthematous pustulosis, Stevens-Johnson syndrome, Lyell's syndrome, maculopapulous exanthema, bronchospasm, laryngospasm, laryngeal oedema, dyspnoea, sneezing, cough, tightness in throat, nausea, vomiting, abdominal pain, agitation, headache, vertigo, hearing impaired, presyncope, tremor, paresthesia, somnolence, convulsions, confusion, visual disorders, amnesia, photophobia, transient blindness, coma, feeling hot, facial oedema, malaise, chills, tachycardia, arrhythmia, ventricular fibrillation, hypotension, circulatory collapse, hypertension, angina pectoris, myocardial infarction, cardiac arrest, torsades de pointes, coronary arteriospasm, respiratory arrest, pulmonary edema, thyroid disorder, acute renal failure, anuria, blood creatinine increased, injection site pain, inflammation, oedema, necrosis following extravasation. – **Overdose (*)** – **Pharmacodynamic properties (*)**: Pharmacotherapeutic group: Water-soluble, contrast medium with low osmolarity; ATC code: V08AB11. **Presentation (**): Xenetix 250:** 50 ml, 100 ml, 200 ml or 500 ml glass vials, **Xenetix 300/350:** 20 ml, 50 ml, 60 ml, 75 ml, 100 ml, 150 ml, 200 ml or 500 ml glass vials and 100 ml, 150 ml, 200 ml or 500 ml polypropylene bags. **Marketing authorisation holder (*):** Guerbet - BP 57400 - F-95943 Roissy CdG cedex – FRANCE. **Information**: tel: 33 (0) 1 45 91 50 00. **Revision**: September 2015.

(*) For complete information please refer to the local Summary of Product Characteristics.
(**) Indications, volumes and presentations may differ from country to country.
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.

Background

- Low-osmolar non-ionic contrast media (CMs) are commonly used in hospitals. As the chemical structures of various low-osmolar iodine CMs are quite different, the incidence of immediate adverse drug reactions (ADRs) for each CM may also differ and need to be studied

Objective

- To evaluate retrospectively the incidence rates of immediate ADRs caused by four different low-osmolar non-ionic CMs used in computed tomography (CT) examinations

Methodology

A single-institute, retrospective analysis

- Data for adverse reactions post CM administration were collected from Severance Hospital, Seoul, South Korea using a spontaneous reporting programme and supplemented by an active surveillance programme
- 1,969 immediate ADRs from 286,087 examinations of 142,099 patients who performed contrasted CT examinations between January 2006 and December 2010 were reviewed
- Examinations with iobitridol (**XENETIX®**), iohexol, iopamidol and iopromide were taken into account in the analysis

Endpoints

Immediate ADRs

- Immediate ADR was defined as an adverse reaction that occurred within 1 hour after administration of a CM. Immediate ADR included all allergic reactions and various non-specific reactions

Risk factors for immediate ADRs

- Nature of contrast media, number of CT examinations per day, patient age, gender and body weight were considered

Population

	XENETIX®	Iohexol	Iopamidol	Iopromide	Total over the 5 year period of study
No. of examinations	32,756	65,764	135,882	51,685	286,087
No. of patients	26,053	36,833	87,532	20,024	142,099
Age (years)	41.5 ± 25.1	54.7 ± 16.3	54.3 ± 15.8	57.0 ± 12.9	51.6 ± 18.5
Body weight (kg)	53.5 ± 21.2	63.4 ± 11.4	64.3 ± 11.4	64.8 ± 11.0	62.1 ± 14.3