ICCS
Istituto Clinico Città Studi

Servizio di Diagnostica per immagini
Responsabile Dott.ssa Federica Galli

PATIENT PREPARATION INSTRUCTIONS FOR MRI WITH OR WITHOUT INTRAVENOUS CONTRAST AGENT IN ANY SECTION OF THE BODY

PREPARATION FOR THE TEST

1. The patient **should fast beforehand for at least 6 hours.**
2. The patient will need to bring along the following recent test results:
   - **Creatinine**

The above test is **valid for 3 months**.

Notes

- On the day of the test take your usual medication at home as prescribed by your family doctor.
- In case of allergy to the contrast agent or serious allergy to any other drugs or substances please refer to your family doctor and fill in and bring the attached pre-medication form with you.
- In case of chronic kidney failure (creatinine > 1.2 mg/dL and GFR >30 mL/min/1.73 m2), contact your general practitioner and show the annexed pre-medication protocol.
  In case of GFR <30 mL/min/1.73 m2, the use of a contrast medium is contraindicated.

When booking by telephone, please let the staff of the MRI site know if the patient will arrive on a stretcher and the estimated time of arrival at the facility (tel. 02 2393 4215-2999

On the day of the test the patient must bring all their medical records that relate to the clinical problem being tested.

ALLERGY TO CONTRAST AGENT PREDISPOSITION FORM (iodinated and paramagnetic contrast agents)

24 HOURS BEFORE THE DAY OF THE EXAM, TAKE:

- DELTACORTENE – 1 25 mg tablet
- CETIRIZINE - 1 10 mg tablet
- OMEPRAZOLO - 1 20 mg tablet

13 HOURS BEFORE THE DAY OF THE EXAM, TAKE:

- DELTACORTENE - 1 25 mg tablet
- CETIRIZINE - 1 10 mg tablet
- OMEPRAZOLO - 1 20 mg tablet

7 HOURS BEFORE THE DAY OF THE EXAM, TAKE:

- DELTACORTENE - 1 25 mg tablet
- CETIRIZINE - 1 10 mg tablet
- OMEPRAZOLO - 1 20 mg tablet

1 HOUR BEFORE THE DAY OF THE EXAM, TAKE:

- CETIRIZINE - 1 10 mg tablet

BRIEFING NOTE – NUCLEAR MAGNETIC RESONANCE (MR) AND INFORMED CONSENT FOR I.V. CONTRAST MEDIUM

What is MR?

Magnetic Resonance (MR) is a diagnostic technique which allows to obtain images of the whole body using the interaction between a high intensity magnetic field and radiofrequency waves. The core of the machine is the magnet and during the exam the patient is placed at its center . Nervous system diseases and articular affections are the main indications for MR examination.

Which are the advantages?

The main advantage of MR is that it offers the possibility to explore the body without the use of X-rays; more over it is possible to investigate large districts of the body at one time with minimal invasiveness .

How long is the exam?

The modern MR scans can perform exams in a short time; usually the examination lasts about 30-45 minutes.

How to prepare yourself for the exam?

The exposure to magnetic fields and to radio waves can be contraindicated in some cases. Therefore, it is necessary to fill, mostly with your Doctor, the Questionnaire received at the booking desk and remember to bring the form with you the day of the exam.

If you realize to have any contraindication please contact Radiologic Department in advance to avoid the risk to be refused on the programed date.

All patients with cardiac implantable electronic devices must go to the specialist cardiologist with the module (ModRMN02) and the documentation (identification card) of the device in order to obtain the authorization for the MRI examination and possibly program the safety measures necessary.

Which are the possible contraindications?

Pace-maker, vascular surgical clips (abdominal, cerebral vessels,…), neurostimulator devices, infusion port-cath, pregnancy are absolute contraindications. Further specific situations are listed in the Questionnaire.

How is the exam performed?

Before the exam ocular lens, mobile dental prosthesis, acoustic devices, watch and every metallic object must be removed.

During the exam the patient must lay on a special stretcher placed at the center of the magnet. The patient's cooperation in standing still is essential for proper examination success. The equipment produces electronic images, that are then processed and sent to a monitor for visualization. The images are supplied on a CD.

When is contrast medium used?

In case of particular diagnostic issues, injection of a particular contrast medium containing gadolinium can be performed, which enhances the signal's quality of many organs and particular tissues. The administration of the contrast medium is performed through an injection in the forearm's vein.

There are no absolute contradictions to its use, except for known allergic reactions to contrast medium (which have to be notified to the Radiologist in advance), or in case of severe renal or liver impairment, or other severe clinical conditions. Therefore, before the exam, the collection of a blood sample is needed to test the creatinine level. The result has to be shown to the Radiologist.

As any other drug the CT contrast medium can rarely cause allergic reactions, in very few occasions these can be severe; in any case every reaction can be successfully treated.
The patient should be fasting the morning of the exam.

INFORMED CONSENSUS

Mr/Mrs _____

Born on_____

Informed on the risks linked with the use of iv. contrast medium for MR, having read and understood the birefing note

❑ I agree ❑ I don't agree

to undergo the diagnostic procedure.

Milan, _____

Patient's signature_____

Signature of the Radiologist MD_____

PATIENTS' HYDRATION PROTOCOL FOR THE PREVENTION OF CONTRAST-INDUCED NEPHROPATHY

In view of examinations involving intravenous administration of an iodinated contrast medium to patients:

1. with moderate to severe **Chronic Renal Failure** (blood creatinine >2 mg/dL);
2. with **blood creatinine > 1.2 mg/dL and clearance <50 mL/min** (*), particularly in diabetic patients aged over 70 years.

The following ***hydration protocol*** is recommended:

1. **n-acetyl cysteine** 600 mg x 2/day on the day before and after the examination;
2. **hydration**: for mild CRI (creatinine <2 mg/dL): 500 cc of water the evening before and 500 cc on the morning of the examination; maintain increased water intake for 24 hours after the examination. In case of creatinine >2 mg/dL, IV administration of *physiological solution* 1 mL/kg/h six hours before and after the examination (based on the patient's cardiocirculatory conditions).

NB: the examination is CONTRAINDICATED in patients with acute kidney failure, and should be reconsidered following a consultation with a Nephrologist.

(*) to calculate clearance using the Cockcroft-Gault equation:

$$\frac{(140 - \text{age}) \times \text{lean body mass}}{\text{Plasma creatinine} \times 72\ ♂} \times 0.85 \text{ (only for } ♀)$$

For patients taking Metformin

a. eGFR ≥ 45 mL/min/1.73 m2	suspension of Metformin <u>not required;</u>
b. eGFR < 45 mL/min/1.73	suspend Metformin 48 hours before the MDC, and recommence 48 hours after MDC, only if renal function has not been aggravated.

1. European Society of Urogenital Radiology GUIDELINES ON CONTRAST MEDIA 2018 (http://www.esur.org/esur-guidelines/contrast-media-70/)
2. Stacul, F., van der Molen, A.J., Reimer, P. *et al.* Contrast induced nephropathy: updated ESUR Contrast Media Safety Committee guidelines. *Eur Radiol* **21,** 2527–2541 (2011). https://doi.org/10.1007/s00330-011-2225-0 (http://rd.springer.com/article/10.1007/s00330-011-2225-0/fulltext.html)

Sistema Sanitario Regione Lombardia