

Radiology of Indiana

MRI CONTRAST CHOICE FOR LIVER EVALUATION

Last revised 7/11/2022

GADAVIST

(this is to be used most often and to be used if otherwise contrast agent is unclear)

to be used in:

- All **cirrhotics** which includes hepatocellular carcinoma (aka hepatoma screening/evaluation)
- Search for **metastasis** (this is the default contrast and will be used most often, use this agent if to otherwise specified in prior radiology report or physician order for MRI)
- **Vascular assessments**
- Liver lesion is a **suspected hemangioma** (based on prior imaging)
- **Pancreatic or renal mass**

Recommended Agent: Gadavist 0.1mmol/kg

EOVIST

to be used in:

- To use for suspected **FNH (focal nodular hyperplasia)** only if this is mentioned in prior report or in physician order and will usually be done **in women of childbearing age who have an liver lesion of unknown etiology.**
- Certain **biliary (bile duct) workups:**
Major indications: PSC, bile duct injury/leak, stones, biliary masses, congenital biliary disease, etc. Eovist is the preferred agent for MRI with MRCP for evaluation of these conditions.
- In limited situations with Non-cirrhotic livers for **search for metastasis in patients who may later need segmental liver resection or lesion ablation using microwave or RF ablation** (this is not the default agent for metastasis but in certain situations such as this it is the best contrast). To use in this situation the prior radiology report or physician request must specify its use.

Recommended Agent: Eovist 0.1 to 0.2 mL/ kg body weight (0.025 to 0.05 mmol/kg)

The above guidelines should serve as the default approach. Agents should not be switched unless there is a good reason to do so. *In most cases, this protocol outline should be all that is required for the technologist to determine which contrast agent will be used. In some complicated patients however with different diseases or a mixture of indications for the test, consultation with the radiologists prior to imaging will be needed.*

GADAVIST

Adults and Children (2 years and older)

GADAVIST is to be administered in the following amounts (Gadavist is to be administered at 0.1 mL/kg body weight (0.1 mmol/kg))

BODY WEIGHT		VOLUME TO BE ADMINISTERED
lb	kg	mL
22	10	1
33	15	1.5
44	20	2
55	25	2.5
66	30	3
77	35	3.5
88	40	4
99	45	4.5
110	50	5
132	60	6
154	70	7
176	80	8
198	90	9
220	100	10
242	110	11

EOVIST

VOLUME OF EOVIIST is to be given to be administered is between the following amounts (at 0.025 to 0.05 mmol/kg which is equivalent to 0.1 mL to 0.2 mL/ kg body weight) with the concept that the higher values, within this range, should be used unless doing so requires additional package of contrast to be opened. With this in mind, the following dosing is recommended *:

BODY WEIGHT		VOLUME TO BE ADMINISTERED (normal renal function)
lb	kg	mL
22	10	2
33	15	3
44	20	4
55	25	5
66	30	6
77	35	7
88	40	8
99	45	9
110-165	50-75	10
over 165	over 75	15

* Patients with severely reduced renal function, ($GFR \leq 30$), and if contrast has been approved by a radiologists, and consent obtained from the patient, will receive the lower range of this dosage, and will receive Eovist via the weight based dosing chart at (0.025 mmol/kg = 0.1mL/kg).

Clinical Guidelines for Gadolinium Based Contrast Agents for Hepatobiliary MR Imaging

General Principle:

Gadavist is preferred for vascular imaging and characterization of lesions using dynamic imaging. For most Abdominal MRI exams, Gadavist is the agent preferred by most radiologists.

Eovist is preferred for bile duct imaging and lesion characterization using delayed imaging (and to use this agent the technologist should look for the following: specific recommendation of this agent in a recent prior imaging test – CT or US, and if the clinical indication is to assess for certain bile duct abnormalities like bile leak or bile stricture, or if specifically requested by radiologist or MRI ordering physician)

Background: the following guidelines for liver MRI contrast enhanced imaging are based on the reported literature and our experience using Eovist, a newer hepatobiliary gadolinium-based contrast agent. These guidelines are intended as a guide to improve uniformity of practice and to avoid patient call-backs, while balancing special needs of patients, and to be mindful of the relative cost of Eovist (cost of Eovist is higher than other agents).

Imaging Protocol: when Eovist is used, at least one high resolution T1 weighted sequence should be acquired at ≥ 20 minutes. High flip angle (30-40°) with high spatial resolution should be used, preferably with navigators.

Dose: the FDA approved package insert dose of Eovist is 0.025 mmol/kg. Higher doses are used in many institutions, however. Quantitative data demonstrate that 0.05 mmol/kg (0.2 mL/ kg) provides adequate dosing for dynamic imaging. Dosing should be weight-based in small patients to avoid inadvertent high doses in these small patients. If calculated dose 1ml greater than nearest bottle volume, dose should be reduced to reduce cost. eg. 10ml is OK if the calculated dose is 11ml. Please see dosing chart on page 2 which helps to simplify dosing

EOVIST is for intravenous administration.

Visually inspect EOVI~~ST~~ST for particulate matter and discoloration prior to administration. Do not use the solution if it is discolored or if particulate matter is present. EOVI~~ST~~ST should not be mixed with other drugs. EOVI~~ST~~ST is intended for single use and should be used immediately after opening. The rubber stopper should never be pierced more than once.

Administer EOVI~~ST~~ST undiluted as an intravenous bolus injection at a flow rate of approximately 1 mL to 2 mL per second. Flush the intravenous cannula with physiological saline solution after the injection. Discard any unused portion of an EOVI~~ST~~ST vial.