GUIDELINES FOR GADOLINIUM ADMINISTRATION IN PATIENTS WITH CHRONIC RENAL FAILURE.

Recent studies have shown an association between exposure to gadolinium and the development of Nephrogenic Fibrosing Dermopathy (NFD) (also known as Nephrogenic Systemic Fibrosis (NSF)). NFD/NSF is seen in patients with advanced renal failure. The disease causes fibrosis of the skin and connective tissue and occasionally of the internal organs. It can range from mild to severe and is sometimes fatal. Patients with NFD/NSF have swelling and tightening of the skin of the extremities and sometimes the trunk. The condition may develop in days or over several weeks. Severely affected patients may be unable to walk or extend their joints. Involvement of the internal organs can lead to death.

The guidelines below are devised to minimize exposure of patients with chronic renal failure to gadolinium

1. Patients with moderate (estimated GFR less than 60 mL/min/1.73m^2) to end-stage renal disease (eGFR less than 15 mL/min/1.73m^2, or a serum creatinine more than 3mg/dl), who are not on dialysis, are at risk of developing NFD/NSF if exposed to gadolinium. In these patients, alternative imaging tests, or MRI without gadolinium should be considered. If gadolinium-enhanced MRI is deemed necessary, the dose should be limited to 0.1 mmol/kg and to a maximum of 20 ml of gadolinium chelate. Magnevist contrast agent is preferred. At the present time, immediate post procedure dialysis has not been proved effective in these patients.

2. Patients with renal failure on chronic dialysis are also a high risk group. Alternative tests or MRI without gadolinium should be considered in this group. If gadolinium-enhanced MRI is necessary, the dose should be limited to 0.1mmol/kg and to a maximum of 20 ml of gadolinium chelate. Magnevist contrast agent is preferred. Dialysis may remove free gadolinium but does so only partially at each treatment and cannot be relied on to make up for exposure that has already occurred. However, in view of the fact that some gadolinium is removed, it is recommended to perform dialysis as soon as possible (within a few hours) after the gadolinium-enhanced MRI study in this patient group.

3. In the above groups, it is advisable not to perform more than one gadolinium-enhanced MRI study in one week's time. If gadolinium is deferred and iodinated contrast is used, then acetylcysteine prophylaxis should be considered in an effort to protect any residual renal function.