

Type II Diabetes and Renal Insufficiency

Purpose: The following information is provided as a guideline for radiologists and referring physicians regarding patients receiving iodinated contrast as part of a Radiologic examination or procedure supervised by the department of Radiology at LSUHSC.

N-Acetylcysteine (Mucomyst):

Patients with renal impairment may be at decreased risk of further renal injury by using Acetylcysteine (Mucomyst) 600 mg po x 2 doses the day prior to the contrast injection followed by 600 mg po x 2 doses the day of the exam/procedure. The last dose may be given after the contrast administration. Acetylcysteine administration does not replace or in any way decrease the need for adequate intravenous hydration.

Sodium bicarbonate: Reno-protective value from sodium bicarbonate infusion has more recently been postulated, and could be considered at the discretion of the referring physician.

References:

- Tepel M, van der Giet M, et al. **Prevention of Radiographic-Contrast-Agent–Induced Reductions in Renal Function by Acetylcysteine.** *N Engl J Med.* 343(3): 180-184, 2000 July 20.
- Safirstein R, Andrade L, Vieira J M. **Acetylcysteine and Nephrotoxic Effects of Radiographic Contrast Agents -- A New Use for an Old Drug.** *N Engl J Med.* 343(3): 210-212, 2000 July 20.
- Merten G, Burgess WP, Gray LV, et al. **Prevention of Contrast-Induced Nephropathy With Sodium Bicarbonate- A Randomized Controlled Trial.** *JAMA.* 291(19) 2328-2334, 2004 May 19.

Metformin (Glucophage):

In 1998, Bristol-Myers Squibb Company revised its recommendations for use of Glucophage (metformin hydrochloride tablets) in patients with Type 2 diabetes who require parenteral administration of iodinated contrast for radiologic studies. The revised and current labeling recommends that Glucophage be discontinued at the time of or prior to the procedure and withheld for 48 hours post procedure. Once renal function is found to be normal, the oral hypoglycemic may be restarted. Please ask your patients to discontinue the medication the morning of their scheduled exam. Arrangements to have serum BUN and Creatinine levels checked 48 hours post procedure should be made by the referring physician for patients who will have imaging on an outpatient basis. Levels need to be reviewed prior to resuming oral Glucophage.

Please be aware that in more recent years, additional generic and combination products containing metformin have reached the market. Patients should be screened for use of these agents prior to imaging with iodine-based contrast.

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