

| SECTION | SUBJECT | PAGE |
|----------------|---|----------------------|
| RESTRICTED USE | nitrofurantoin (Macrochantin®, MacroBID®) | 1 of 1 |
| | Original | YY MM DD 00 08 25 |
| | Revised | 10 03 25 |
| | Revised | 14 10 23 |

Bottom Line: Nitrofurantoin may be considered for use in acute uncomplicated UTI when CrCl is as low as **40 to 60 mL/min**.

Background:

The product monograph for MacroBID, Bugs & Drugs, Sanfords, and numerous other references indicate that nitrofurantoin is contraindicated at CrCl below 60mL/min. However, this is in contradiction to the 1988 monograph for Macrochantin, which states a lower limit of 40mL/min; the 60mL/min limit was not stated until the 2003 monograph for MacroBID¹. As reviewed by Oplinger, the 60mL/min cut off appears to be rooted in various studies from the 1960's basing results on recovery of the drug and its metabolites in urine. Criticisms of these studies range from study design, to small sample size, to lack of clear inclusion/exclusion criteria, and as well, were based on a single dose of nitrofurantoin vs. the sustained dosing used in clinical practice.

More recent data suggests that 40mL/min may be used for treatment of susceptible pathogens, with the drug being excreted in the urine in patients with renal function as low as 30mL/min. The risk of treatment failure and adverse events likely rises with lower renal function, but unfortunately, due to many studies lacking hard clinical endpoints (such as bacterial eradication and cure of clinical symptoms), it is not possible to ascertain the exact risks and benefits for treatment at lower renal function. In the Calgary LTC population, where resistant bacteria are commonplace and treatment options are sometimes limited, it will be up to clinician judgment as to whether treatment at reduced CrCl may be an acceptable therapeutic option.

- 1) Oplinger, M. Nitrofurantoin Contraindications in Patients with a Creatinine Clearance Below 60mL/min. *Ann Pharmacother* 2013;47:106-11.
- 2) AHS internal document. ID gen #119 – Nitrofurantoin renal function. November 30, 2012.
- 3) Micromedex

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