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APPENDIX E - TAB B**MEDICAL TREATMENT PROTOCOL FOR SUSPECTED UROLITHIASIS**

1. The recommended treatment for suspected urolithiasis shall be as follows:

a. Hydration: Maintain oral hydration at a level high enough to have at least 1-2 L of urine output per 24 hour period. May start IV fluids if necessary (i.e., vomiting). Using Lactated Ringers or 0.9 percent normal saline at a rate of 150 ml/hr and adjust rate to maintain a urine of at least 2000 ml/24 hours.

b. Pain Control: This is often poorly addressed, and is a disservice to the patient. Ensure that the patient is kept comfortable. If two interventions to control pain are unsuccessful, urgent UMO consultation should be sought.

(1) Start patient on Ibuprofen (B/D) 800 mg orally every 8 hours or Naproxen (B/D) 500mg orally every 12 hours.

(2) Greater pain control, if necessary, can be achieved using Ketorolac (C) 30 mg IM/IV every 6 hours as needed. Do not exceed 120 mg IM/IV each day for a combined duration of 5 days.

(3) Oral narcotics, either Codeine (C) or Hydrocodone (C), should be used as an adjunct for breakthrough pain if the above course of NSAIDs is not sufficient to control pain.

2. Morphine (C) should be considered if pain is not controlled with the above alternatives.

a. If severe dysuria is present, utilize phenazopyridine (B) 100 mg PO every 8 hours for 2 days. (Be aware that this Medication may change the color of the urine and/or contact lenses orange.)

b. Nausea and Emesis: If nausea and emesis are present, Utilize Promethazine (C) 12.5-25 mg PO, PR or IV every 6 hours as needed for control. If using higher dosing of Promethazine, be aware of potential for dyskinetic reaction. Treatment for this is Diphenhydramine (B) 25 mg IV and discontinuation of Promethazine.

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c. Stone Expulsion: To increase the rate of spontaneous stone passage, in male patients only, start Alfuzosin (C) 10mg orally once daily with meal.

3. For signs of UTI/Pyelonephritis:

a. For uncomplicated UTI, start Ciprofloxacin (C) 500 mg orally every 12 hours for seven days, or Septra DS (C) orally every 12 hours for seven days. For +HCG patients, start Nitrofurantoin (B) 50-100 mg orally at bedtime for seven days.

b. For complicated UTI (fever >101 F, WBC >11,000, hemodynamic instability, flank pain), start Unasyn (B) three grams IV every six hours, or Ceftriaxone (B) one gram IV every 12 hours. For patients with confirmed PCN and cephalosporin allergies, use Ciprofloxacin (C) 500 mg orally every 12 hours.

c. Have patient strain urine and retain any stones for future chemical analysis. Passage of a stone does NOT negate the need for MEDEVAC (at next reasonable opportunity). The patient will be NPQ for submarine duty until a full evaluation can be completed.

d. Transfer to a medical treatment facility or clinic for evaluation at next earliest convenience. Complicated UTI requires an urgent MEDEVAC to an Urologist.

e. Provide 24-hour updates on the patient's medical status to the higher echelon medical authority, or sooner if directed. Updates should include complete interval history, physical exam, labs (CBC and U/A with Micro), pain control method and urine output status.