

# On-Demand Clinical News

## Management of UTIs: Hospice Considerations

By Joelle Potts, PharmD, BCGP

A urinary tract infection (UTI) is defined as the presence of urinary-specific signs/symptoms in a patient who has both bacteriuria and no other identified sources of infection. The normal urinary tract is typically relatively resistant to infection, due to the natural flushing effect that the regular flow of urine has on bacteria. But structural abnormalities or obstruction can interfere with this normal voiding process and increase the risk of developing a UTI. Many types of urinary obstruction are somewhat common in elderly and/or hospice patients, such as prostatic hypertrophy, calculi, tumors, and anticholinergic medications (which can cause urinary retention), as well as neurologic malfunctions such as stroke, diabetes, spinal cord injuries, and neuropathies. Urinary catheterization also increases the risk of UTI. UTIs are typically more common in women until approximately the age of 65, and then the incidence rates between men and women are similar.

Typical signs/symptoms of a UTI can vary with the portion of the urinary tract that is affected. Lower UTIs, involving the bladder and also known as cystitis, can present with dysuria, frequency, urgency, nocturia, and a feeling of suprapubic "heaviness". Upper UTIs, involving the kidneys and also known as pyelonephritis, can present with flank pain, fever, nausea, vomiting, malaise, and costovertebral tenderness on physical exam.

### *Do not treat asymptomatic bacteriuria*

Asymptomatic bacteriuria (ASB) is defined as the presence of bacteria in a non-contaminated urine specimen in a patient without signs/symptoms of urinary origin. The prevalence of ASB increases with age, especially in patients 70 years of age or older (10.8-16% of women and 3.6-19% of men in this age group living in the community have ASB), and is higher yet in elderly patients living in a long-term care facility (25-50% of women and 15-40% of men in this setting have ASB). As a point of comparison, the prevalence of ASB in healthy, premenopausal women is 1-5%. Catheterization also increases the risk of developing ASB, and each day the catheter remains in place increases the likelihood it will occur; in patients with a long-term catheter (defined as remaining in place for 30 days or longer), the prevalence of ASB is virtually 100%.

According to Infectious Disease Society of America guidelines, it is not recommended to routinely screen for or treat ASB in either catheterized or non-catheterized patients, as evidence indicates that

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## *Pediatric Considerations at End of Life*

By Madeline Vallejo, PharmD

Pediatric palliative/hospice care seeks to manage symptoms and provide comfort measures. It is an evolving discipline in the field of pediatrics, but it is clear that children who live with life-threatening conditions obtain great benefit from palliative care. Pediatric hospice prepares not only the patients, but their families for an anticipated death.

Common symptoms in the pediatric population include pain, nausea, dyspnea, constipation, diarrhea, anorexia, sialorrhea, pruritus, and urinary retention. Pain is the symptom with the most variety of treatment options, such as medications, acupuncture, aromatherapy, comfort measures, cognitive behavioral techniques, and physical measures. PIPP<sup>+</sup>, CRIES<sup>^</sup>, FLACC<sup>~</sup>, and Wong-Baker Faces<sup>§</sup> are all used to assess pain in infants and children. Once a pain scoring model has been implemented, all providers should use the same system.

Online symptom assessment tools are available for different ages and developmental groups. These online tools are being developed both in a research context and in a patient-focused manner. These tools make it easier for the clinicians to understand patient symptoms and recognize the bigger picture. Some examples are PediQUEST, KLIK, mobile apps, and therapeutic toys.

Nurses play a crucial role in the care of these children. They are the advocates for parents, and they provide information and psychological and emotional support.

There are many challenges to providing palliative care to pediatric patients. There is a lag time from accepting there is no cure to acquiring hospice care. There is no set of minimum standards and guidelines for pediatric hospice. Involvement of a palliative care team is very important to help relieve the symptoms and suffering for children with life-limiting conditions.

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Pharmacists, in particular, are well suited to help dose medications appropriately for infants and children and to determine which medications should be avoided altogether in pediatric patients. A ProCare clinical pharmacist is available 24/7 for guidance when needed.

**+PIPP Scale**

	0	1	2	3
GA	>/= 36 Wks	32-35 6/7 Wks	28-31 6/7 Wks	< /=28 Wks
Behavioral State	Active/Awake	Quiet/Awake	Active/Sleep	Quiet/Sleep
HR	0-4 Beats/Minute Inc.	5-14 Beats/Minute Inc.	15-24 Beats/Minute	25 Beats or > INC
O2 Sats	0-2.4% Decrease	2.5-4.9% Decrease	5-7.4 Decrease	7.5% or > Decrease
Brow Bulge	None	Minimum	Moderate	Maximum
Eye Squeeze	None Minimum	Minimum	Moderate	Maximum
Nasolabial Furrow	None	Minimum	Moderate	Maximum

**^Cries Scale**

Date/Time					
<p><b>Crying</b> – Characteristic cry of pain is high pitched.</p> <p>0 - No cry or cry that is not high pitched</p> <p>1 - Cry high pitched but baby is easily consolable</p> <p>2 - Cry high pitched but baby is inconsolable</p>					
<p><b>Requires O<sub>2</sub> for SaO<sub>2</sub> &lt; 95%</b> - Babies experiencing pain manifest decreased oxygenation. Consider other causes of hypoxemia, e.g. oversedation, atelectasis, pneumothorax.</p> <p>0 - No oxygen required</p> <p>1 - &lt;30% oxygen required</p> <p>2 - &gt; 30% oxygen required</p>					
<p><b>Increased vital signs (BP* and HR*)</b> – Take BP last as this may awaken child, making other assessments difficult.</p> <p>0 - Both HR and BP unchanged or less than baseline</p> <p>1 - HR or BP increased but increase in &lt;20% over baseline</p> <p>2 - HR or BP is increased &gt; 20% over baseline</p>					
<p><b>Expression</b> – The facial expression most often associated with pain is a grimace. A grimace may be characterized by brow lowering, eyes squeezed shut, deepening nasolabial furrow, or open lips and mouth.</p> <p>0 - No grimace present</p> <p>1 - Grimace alone is present</p> <p>2 - Grimace and non-cry vocalization grunt is present</p>					
<p><b>Sleepless</b> – Scored based upon the infant’s state during the hour preceding this recorded score.</p> <p>0 - Child has been continuously asleep</p> <p>1 - Child has awakened at frequent intervals</p> <p>2 - Child has been awake constantly</p>					
<b>TOTAL SCORE</b>					

neither the screening for nor treatment of ASB lead to improved clinical outcomes. Also, the presence of ASB is not associated with long-term adverse outcomes, and the treatment of ASB neither decreases the frequency of symptomatic infection nor prevents further episodes of ASB; in fact, studies show the use of antibiotics may predispose women to UTI, likely by altering the flora colonizing the vagina. In addition, use of unnecessary antibiotics can lead to development of resistance, adverse reactions, and wasted expense. The Association of Medical Microbiology and Infectious Disease Canada has coined a great motto on the subject: "Symptom-free pee: Let it be."

### *Symptoms in special populations*

Although the definition of a UTI specifies the presence of urinary-specific signs/symptoms, it is important to note that some populations frequently do not present with typical urinary symptoms. Elderly patients make up a large percentage of our hospice population, and they often do not have significant urinary symptoms; they may instead present only with altered mental status, a change in eating habits, or gastrointestinal symptoms. Patients with indwelling catheters or neurologic disorders typically do not present with lower UTI symptoms, but may present with flank pain or fever. Patients with spinal cord injury who are catheterized may present with increased spasticity, autonomic dysreflexia, or a sense of unease.

If a patient presents without typical or urinary-specific symptoms, it is important to rule out other potential causes of the symptoms before initiating an antibiotic for a UTI. For example, cognitive/functional changes alone could be caused by many possible problems, including dehydration, drug interactions and/or side effects, sleep disturbances, constipation, urinary retention, or hypoglycemia. Also note that foul smelling, dark, and/or cloudy urine alone typically indicates dehydration; rather than immediately treating for UTI in this situation, consider rehydrating the patient, if possible, and monitoring very closely for the next 24 hours.

### *Most antibiotics require dosage adjustment in renal impairment*

Renal impairment is common in our hospice population, primarily because most of our hospice patients are elderly and have age-related decline in renal function, but also possibly due to comorbidities and/or terminal decline. Serum creatinine and other renal labs are only part of the renal function picture. It is important to remember that most antibiotics require dosage reduction in patients with renal impairment. Specific details on the amount of dose reduction are antibiotic-specific and are often based on the degree of renal impairment.

One antibiotic that may have particular concerns with regards to renal impairment in our hospice population is nitrofurantoin (Macrobid®, Macrochantin®). According to the manufacturer's prescribing information, nitrofurantoin is contraindicated for use in significant renal impairment (defined as creatinine clearance (CrCL) less than 60mL/minute or significantly elevated serum creatinine), oliguria, or anuria. As a result, the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults has historically recommended against the use of nitrofurantoin in elderly patients. However, the 2015 updated Beers Criteria has revised this recommendation based on evidence that nitrofurantoin is relatively safe and effective for short-term use in patients with a CrCL of 30mL/minute or greater. The 2015 Beers Criteria update still recommends against using nitrofurantoin for long-term prophylaxis in elderly patients due to the risk of pulmonary fibrosis, liver toxicity, and peripheral neuropathy, and because safer alternatives are available for long-term prophylaxis in this population.

Treating a symptomatic UTI with antibiotics can significantly improve the level of comfort and quality of life for our hospice patients. However, if a patient is presenting with only vague or non-urinary symptoms, evaluate carefully for other potential causes of these symptoms before starting an antibiotic for UTI. Remember that routine screening for and treatment of ASB are not recommended in either catheterized or non-catheterized patients. Care should always be taken to use antibiotics judiciously to prevent the development of resistance and adverse effects in our patients and to avoid wasted hospice expenses.

~FLACC Scale

Behavioral Observation Pain Rating Scale			
Categories	Scoring		
	0	1	2
Face	No Particular Expression or smile; Disinterested	Occasional grimace or frown, withdrawn	Frequent to constant frown, clenched jaw, quivering chin
Legs	No position or relaxed	Uneasy, restless, tense	Kicking, or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No crying (awake or asleep)	Moans or whimpers, Occasional complaint	Crying steadily, screams or Sobs, frequent complaints
<u>Consolability</u>	Content, relaxed	Reassured by occasional Touching, hugging, or talking to. Distractible	Difficult to console or comfort

*Each of the five categories (f) Face; (L) Legs; (A) Activity; (C) Cry; (C) Consolability is scored from 0-2, which results in a total score between 0 and 10*

\$ Wong-Baker Faces

Wong Baker Faces® Pain Rating Scale					
					
<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>
No Hurt	Hurts Little Bit	Hurts Little More	Hurts Even More	Hurts Whole Lot	Hurts Worst

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*Featured Speakers:*

Meri Madison, PharmD, Nate Hedrick, PharmD, Kristin Speer, PharmD, and Kiran Hamid, RPh

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[Upcoming Lunch and Learn Presentations](#)

**July: Medication Management in Hospice and Palliative Care**

Presenter: Karen Bruestle-Wallace, PharmD, CGP

Dates: Tuesday, July 10, 2018 at 3:00PM ET; Wednesday, July 11, 2018 at 12:00PM ET

**August: Management of Upper Respiratory Tract Infections in the Hospice Patient**

Presenter: Shaun Gutstein, PharmD

Dates: Tuesday, August 7, 2018 at 3:00PM ET; Wednesday, August 8, 2018 at 12:00PM ET

RSVP by contacting Suzanne Stewart, Lunch and Learn Coordinator, at:  
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