Asymptomatic Bacteriuria

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Typical healthy adult should not have bacteria growing in their urine, bladder, or kidneys. However, in the presence of bacteria, patients may experience pain associated with a urinary tract infection (UTI), such as pain in the bladder, groin, lower abdomen, or pelvis. Furthermore, the signs and symptoms associated with a UTI include foul-smelling urine, frequent urination, bladder spasm, cloudy urine, dark urine, persistent urge to urinate, sense of incomplete bladder emptying, or blood in urine. These symptoms are associated with a specific quantity of bacteria within the urinary tract. However, there are instances when a patient may not experience symptoms, however may possess bacteria growth. This condition is asymptomatic bacteriuria.

Risk factors associated with this condition include: having a urinary catheter in place, female gender, pregnant sexually active females, having long-term diabetes in females, older adults, recent surgical procedure in the urinary tract. In order to diagnose asymptomatic bacteriuria, a urine sample must be sent to a laboratory for urine culture. However, it is important to note, that most patients that are not experiencing symptoms do not need urine cultures.

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Patient populations that may require a urine culture are:
- pregnant patients
- patients that have a surgery or procedure planned that involves bladder, prostate, or other parts of the urinary tract.

Furthermore, most patients do not require treatment for this condition. However, certain populations may be at an increased risk of severe problems if left untreated. Therefore, patients including: pregnancy, recent kidney transplant, children with reflux (backward movement of urine from the bladder into ureters or kidneys), and/or if scheduled for surgery involving the prostate gland, the bladder, and those with kidney stones, may be treated with an antibiotic regimen.²

It is increasingly important to identify the specific patient populations that require treatment.

The overuse of antibiotics in hospital settings can cause antibiotic side effects, excess costs to the healthcare system, and potentially trigger antimicrobial resistance. Some of the reasons that may lead to over-prescribing of antibiotics include over-cautiousness, excessive workload, and lack of awareness of evidence-based best practices.² Furthermore, implementation of guidelines detailing the use of antibiotics in this patient population is necessary to avoid complications related to over and under-treatment of asymptomatic bacteriuria.

References:

Q: What are the new laws in NJ regarding opioid prescriptions?

A: Beginning on May 16th, 2017, the new opioid restriction law takes effect in the state of New Jersey. This new law applies to opioid prescriptions that are being prescribed for acute or chronic pain. However, it excludes cancer, hospice, palliative care, long-term care facility patients, and opioids used in the treatment of substance abuse.

Outlined below is a brief summary of the new opioid requirements for both acute and chronic pain management. Clinicians are referred to the law, and their profession’s governing boards for complete laws and regulations that affect their practice.

Prescriptions for acute pain:
- Initial prescription for a Schedule II controlled pain medication or any opioid must be no greater than a 5 day supply
- An initial prescription is defined as any opioid prescription prescribed for a patient who hasn’t received a prescription for the same opioid medication within one year of the written date of the current prescription
- Prescription must only be an immediate-release formulation for acute pain
- Prescriber must state on the prescription that it is an "initial" prescription
- A 2nd prescription for an opioid medication cannot be prescribed less than 4 days after the initial prescription order
- Prior to this 2nd prescription, a consultation is required by the prescriber
- The 2nd prescription can be up to a maximum of a 30 day supply
- Prior to the 3rd prescription, a pain management agreement must be established between the patient and the prescriber

Prescriptions for chronic pain:
- If patient is taking medication for chronic pain (3 or more consecutive months), then the prescriber is required to review the treatment every 3 months, with at least one urine screen performed annually
- Every counseling session must be documented in the patient record

Malignant hyperthermia (MH) is a potentially deadly, inherited disorder that occurs within the skeletal muscles of susceptible individuals. MH causes a biochemical chain reaction response “triggered” by commonly used general anesthetics (ex. desflurane and sevoflurane) and depolarizing neuromuscular blocking agents, such as succinylcholine. The common signs of an MH crisis include increased heart rate, increased body metabolism, increased end-tidal carbon dioxide, muscle rigidity and/or fever that may exceed 110°F. Severe complications include cardiac arrest, brain damage, internal bleeding or failure of other body systems.¹

Risk factors
Over 80 genetic defects have been associated with MH, and susceptibility is inherited with an autosomal dominant inheritance pattern. Genetic testing and muscle biopsy can be performed, if necessary, to determine whether a patient will be susceptible to MH. However, not everyone who has a gene defect linked to MH develops the MH crisis upon exposure to the triggering anesthetic.¹

MH Crisis Treatment
When a patient is suspected to experience an acute MH event, gaseous anesthetics and succinylcholine should be discontinued as soon as possible. General anesthesia can be maintained with non-triggering anesthetics such as sedatives, narcotics, and non-depolarizing neuromuscular blocking agents (ex. rocuronium, vecuronium, atracurium).

Currently, dantrolene (Ryanodex®, Dantrium®) is the only treatment for malignant hyperthermia. During an episode of MH, an increase of calcium within the muscle cause a dramatic increase in muscle metabolism, causing muscles to contract. This also leads to ATP hydrolysis and the production of heat. Dantrolene directly interferes with the release of calcium in the muscle cells, thereby decreasing muscle contraction.

In the event of a MH crisis, an initial dose of dantrolene at 2.5 mg/kg is given by intravenous push. If signs continue, administer additional boluses up to a maximum cumulative dose of 10 mg/kg. It is recommended to contact the MH Hotline (1-800-644-9737) during an MH crisis for helpful guidance during the event.

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Dantrolene may cause muscle weakness, somnolence, dizziness, and tissue necrosis with extravasation. When used with calcium channel blockers (verapamil or diltiazem), dantrolene may produce significant hyperkalemia. It is important to continuously monitor the patient’s signs and symptoms including carbon dioxide levels, blood oxygen saturation, and temperature.

<table>
<thead>
<tr>
<th></th>
<th>Dantrium®</th>
<th>Ryanodex®</th>
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</thead>
<tbody>
<tr>
<td>Dantrolene dose per vial</td>
<td>20 mg</td>
<td>250 mg</td>
</tr>
<tr>
<td>Number of vials for initial dose*</td>
<td>8 vials (480 ml)</td>
<td>1 vial (3.2 ml)</td>
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<tr>
<td>Water to reconstitute 1 vial</td>
<td>60 ml</td>
<td>5 ml</td>
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*Assumes a 140 lb patient\(^2,3\)

References: