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CathetersPLUS™ Education Series

Urinary Tract Infections with Dr. Curtis Nickel

Below are key highlights from Dr. Nickel's recent presentation on Urinary Tract Infections for our CathetersPLUS™ Education Series – an exclusive series of talks on the most important topics in Urology, chosen by you! Please contact your Red Leaf Medical representative for information on how to participate in upcoming sessions.

Definitions

Urinary Tract Infections (UTIs): urinary tract infection (UTI) is defined as a patient with cystitis-like symptoms (dysuria, frequency and bladder pain) associated with a positive urine culture.

Recurrent UTIs (rUTIs): 2 culture-proven episodes of bacterial cystitis within six months or 3 within one year.

Incidence

- 11/100 women suffer from a UTI in one year.
- 3/100 will have rUTIs.
- The median number of UTIs in women suffering from rUTIs is typically 5-6+ per year.

CUA/AUA/SUFU Guidelines

Recommend continuous low dose antibiotics for a minimum of 3 months to prevent rUTIs.

Discussion

- Antibiotics may cause many short-term morbidities, can be poorly tolerated, and can be associated with severe chronic and even irreversible side effects. They are costly to society and have poor long-term efficacy (rUTI typically recur after antibiotics are discontinued). Overuse of antibiotics is contributing to antimicrobial resistance, an important, alarming and growing medical issue.
- Patients with rUTI suffer with pain and urinary symptoms resulting in disability, time off work, depression, anxiety, and poor quality of life. They can develop rare more serious urinary tract infections, and some may develop long-term complications including bladder hypersensitivity syndrome.

- Evidence-based Alternatives to Antibiotics:
    - A recent study has shown an **increase in water intake** by 1.5L a day will significantly reduce the occurrence of UTIs. Easy to recommend, but hard for a patient to adhere to.
    - **Vaginal estrogen therapy** improves vaginal mucosa in post-menopausal women and reduces UTIs.
    - A **cranberry extract with at least 36 mg Proanthocyanidins (PAC)** has evidence showing efficacy.
    - Some evidence for **d-mannose** in patients with recurrent *E. coli* UTIs.
    - It's difficult to show that **probiotics** work, but they have very few side effects and some patients believe it helps.
    - **Non-steroidal anti-inflammatory drugs (NSAIDs)** reduce acute symptoms for episodic UTIs, but not useful for preventing rUTIs.
    - **Urinary analgesics**, like Pyridium, are beneficial for acute infections, but do not prevent UTIs.
    - A **new vaccine** for UTIs, not yet available in Canada, shows great promise.

A new vaccine for the prevention of rUTIs has undergone rigorous efficacy and safety studies, including a European randomized placebo-controlled study and an ongoing Health Canada approved early clinical experience study in Kingston. The new UTI vaccine is administered via a sublingual route but impacts the mucosal immune system of the bladder. Evidence indicates that it is very safe and effective in reducing the risk of further UTI (compared to a placebo or the number of UTIs prior to vaccination). Following 3 months of daily vaccine administration many patients became UTI free, increases the time to first UTI, improved quality of life, and decreased antibiotic use and health care utilization.

Q&A

1. **Female patients on prophylaxis antibiotics for 10 days, she finished antibiotics and returned with another UTI.**

This is very typical of a treatment refractory (relapse) UTI rather than a reinfection. The patient's original culture should be checked to make sure that she does not have a bacteria resistant to the original antibiotic prescribed. It would be a good idea to repeat the culture at this time and start a second line antibiotic (e.g., Fosfomycin and as a last resort a fluoroquinolone).

If this rapid recurrence of UTI reoccurs again, the patient should be checked for a bladder stone, kidney stone, bladder cancer, etc. with, at minimum, an ultrasound and cystoscopy. Most of the time there is a reservoir of infection or alternatively antibiotic-resistant bacteria in patients with relapsing UTI.

2. **Until vaccines are available how are you evaluating what to give to each patient?**

CUA/AUA/SUFU's guidelines state the recommended treatment for rUTI is low dose antibiotics (1/4 dose in evening) for about 3 months.

In our clinic, we recommend increasing water intake, cranberry extract (with sufficient PAC), d-mannose (for recurrent E. coli UTI), vaginal estrogen for post-menopausal women, and/or probiotics. Some patients have UTI symptoms and fight through it. Recurrent UTIs (uncomplicated) can be self-limited.

In Canada, in terms of antibiotics for rUTI physicians can manage rUTI with:

1. Long-term low dose antibiotic prophylaxis.
2. Episodic treatment with UTI.
3. Post-coital prophylaxis in sexually active females, which can reduce risk (25-75%) and overall reduces antibiotic use.
4. Self-start treatment in well-informed patients, where prophylaxis causes too many problems. The best predicator of another UTI is a patient who has experienced a proven UTI. If symptoms aren't improving in 48 hours, then a urine culture and treatment with a second line antibiotic is recommended.

Many patients don't want antibiotics because of side effects. For those patients the alternative treatments are:

- Increase water intake by 1.5L a day.
- Vaginal estrogen therapy.
- Cranberry extract with at least 36 mg Proanthocyanidins (PAC).
- D-mannose in patients with recurrent E. coli UTIs.
- Probiotics.
- Non-steroidal anti-inflammatory drugs (NSAIDs).
- Urinary analgesics

3. What can we do for patients who are suffering from symptoms who are waiting for results from urine culture and don't want to take an antibiotic until they know they have an infection?

1. Pyridium may ameliorate the stinging/burning and is available again in Canada.
2. A number of studies compared NSAIDS (ibuprofen) to antibiotics and showed that at one week the patients on antibiotics had fewer symptoms, but at 2 weeks it almost the same, and by 4 weeks there was almost no difference in cure rates.
3. Bicarb preparations alkalizes the urine and take away the stinging/burning sensation in some patients.
4. Patients are advised to increase their water intake.
5. Some patients decide to delay antibiotics, as they have learned that the symptoms may be self-limited and improve on their own over time.

All information reviewed and approved by Dr. Curtis Nickel.