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DHA TELEHEALTH CLINICAL GUIDELINES

FOR VIRTUAL MANAGEMENT

OF DYSURIA - 05

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Health Policies and Standards Department
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INTRODUCTION

Dubai Health Authority (DHA) is the responsible entity for regulating, licensing and monitoring health facilities and healthcare professionals in the Emirate of Dubai. The Health Regulation Sector (HRS) is an integral part of DHA and was founded to fulfil the following overarching strategic objectives:

Objective #1: Regulate the Health Sector and assure appropriate controls are in place for safe, effective and high-quality care.

Objective #2: Position Dubai as a global medical destination by introducing a value-based, comprehensive, integrated and high-quality service delivery system.

Objective #3: Direct resources to ensure happy, healthy and safe environment for Dubai population.

ACKNOWLEDGMENT

This document was developed for the Virtual Management of Dysuria in collaboration with Subject Matter Experts. The Health Policy and Standards Department would like to acknowledge and thank these professionals for their dedication toward improving the quality and safety of healthcare services.

The Health Regulation Sector

Dubai Health Authority

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EXECUTIVE SUMMARY

Telehealth is based on Evidence Based Practice (EBP) which is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient.

It means integrating individual clinical expertise with the best available external clinical evidence and guidelines from systematic research.

EBP is important because it aims to provide the most effective care virtually, with the aim of improving patient outcomes. As health professionals, part of providing a professional service is ensuring that practice is informed by the best available evidence.

This guideline is presented in the format comprising of clinical history/symptoms, differential diagnosis, investigations and management. Identification of 'Red Flags' or serious conditions associated with the disease is an essential part of this telehealth guideline as it aids the physician to manage patients safely and appropriately by referrals to ER, family physicians or specialists for a face to face management.

Dysuria is a common condition and can be challenging to diagnose, as it is often present in conjunction with other lower urinary tract symptoms. Dysuria may be external (i.e., urine irritating the inflamed genital organs) or internal (i.e., pain felt in the urethra).

Although infection is the most common cause (urinary tract infection being the most common infection), there is a large list of differential diagnoses that need to be carefully considered, as any infectious or inflammatory condition affecting the genitourinary system may cause dysuria.

Dysuria accounts for between 5% and 15% of visits to family physicians. It is generally more common in women.

Although dysuria is uncommon in men, incidence increases with advancing age. Lower urinary tract symptoms increase dramatically in men aged >40 years due to bladder outlet obstruction secondary to benign prostatic hyperplasia. Among men of all ages who seek medical advice for urological symptoms, dysuria is present in about 5% of cases.

DEFINITIONS/ABBREVIATIONS

Virtual Clinical Assessment: Is the evaluation of the patient's medical condition virtually via telephone or video call consultations, which may include one or more of the following: patient medical history, physical examination and diagnostic investigations.

Patient: The person who receives the healthcare services or the medical investigation or treatment provided by a DHA licensed healthcare professional.

ABBREVIATIONS

BPH	:	Benign Prostatic Hyperplasia
DHA	:	Dubai Health Authority
EBP	:	Evidence Based Practice
ER	:	Emergency Room
OTC	:	Over the Counter
SJS	:	Stevens-Johnson syndrome
STDs	:	Sexually Transmitted Diseases
TEN	:	Toxic Epidermal Necrolysis
UTI	:	Urinary Tract Infection

1. BACKGROUND

1.1. Dysuria refers to discomfort, burning, or sensation of pain during micturition. Patients may also complain of urethral discomfort not associated with micturition. Dysuria is generally a result of irritation of the urethra or the bladder. Inflammatory conditions that affect the urethra cause difficulties in initiating urination and a burning sensation,

1.2. Irritation of the bladder causes bladder contraction, which leads to frequent and painful urination. Although dysuria is typically caused by urethral or bladder inflammation, perineal lesions in women (e.g., from vulvovaginitis or herpes simplex virus infection) can become painful when exposed to urine. The etiology can be broadly divided into 2 categories: infectious and non-infectious. The specific cause generally depends on gender and age group.

1.2.1. Women

- a. 15 to 30 years of age: urethritis is usually the most common cause
- b. 30 to 50 years of age: more likely to be due to gynecological causes (in the absence of bacteriuria), although the incidence of urolithiasis is high in this age group
- c. >50 years of age: urinary tract infection (UTI) is most prevalent in this group
- d. All ages: prevalence of recurrent/chronic pyelonephritis steadily increases throughout all age groups.

1.2.2. Men

- a. 5 to 30 years of age: sexually transmitted diseases (STDs) and non-infectious causes are most common, while prostatitis and UTIs are infrequent
- b. 30 to 50 years of age: urolithiasis is the most frequent cause
- c. >50 years of age: benign prostatic hyperplasia (BPH), UTIs, and recurrent/chronic pyelonephritis are the most likely causes.

1.3. Infectious Causes:

- 1.3.1. Dysuria most frequently results from an infection in the lower urinary tract (e.g., cystitis), but it may also be associated with an infection in the upper urinary tract (e.g., pyelonephritis)
- 1.3.2. Women are at greater risk than men for UTIs. This can be attributed to anatomical differences in the urethra: women have a short and straight urethra, which allows the ascent of bacteria from the perineum, causing infection in both the lower and upper urinary tracts
- 1.3.3. Most uncomplicated UTIs are caused by Escherichia coli, while other organisms such as Staphylococcus epidermidis (15%), Proteus mirabilis (10%), S aureus (5%), Enterococcus species (3%), and Klebsiella species (3%) play a lesser role

1.3.4. It is important to bear in mind that anomalies in urinary tract function and anatomy (e.g., bladder outlet obstruction from BPH, urethral stricture/stenosis, bladder or urethral diverticulum, renal cysts, or neurogenic bladder from conditions such as multiple sclerosis, diabetes, stroke, spinal cord injury, or prolonged outlet obstruction) can not only lead to an increased risk of UTI with the more uncommon causative microorganisms, but can also lead to more severe infections.

1.4. Other infectious conditions that can cause dysuria include:

1.4.1. Urethritis

1.4.2. Sexually transmitted diseases (more common in the younger age group)

1.4.3. Vulvovaginitis

1.4.4. Epididymo-orchitis

1.4.5. Balanitis

1.4.6. Prostatitis

1.4.7. Cervicitis

1.5. Schistosomiasis and tuberculosis are rare infectious causes in the Western world, but they are more common in other parts of the world.

1.6. Non-infectious Causes

1.6.1. Obstructive (often increases the risk of UTI, as well as causing lower urinary tract symptoms): BPH

- 1.6.2. Urolithiasis (may also cause dysuria as a direct result of trauma to the urothelium, as well as referred pain during the passage of stone/s)
- 1.6.3. Urethral strictures/stenosis
- 1.7. Traumatic (dysuria is a result of damage to and irritation of the urothelium):
 - 1.7.1. Honeymoon cystitis (repeated urethral trauma during sexual intercourse)
 - 1.7.2. Catheterization and instrumentation
 - 1.7.3. Sexual abuse
 - 1.7.4. Athletics (e.g., bicycling or horse riding)
- 1.8. Inflammatory (dysuria is partly due to inflammation and irritation of the urothelium):
 - 1.8.1. Interstitial cystitis
 - 1.8.2. Atrophic vaginitis
 - 1.8.3. Spondyloarthropathies (e.g., Behçet's syndrome or reactive arthritis)
 - 1.8.4. Non-infectious prostatitis
 - 1.8.5. Ketamine-induced inflammation of bladder
 - 1.8.6. Urinary fistula (a rare complication of inflammatory bowel disease and some malignancies).
- 1.9. Malignant (dysuria is due partly to local involvement of tumor):
 - 1.9.1. Prostate
 - 1.9.2. Bladder
 - 1.9.3. Renal

1.9.4. Gynecological (particularly cervical)

1.9.5. Urethral

1.9.6. Penile

1.10. Drug- or irritant-related (drugs and chemicals can cause inflammation of the urothelium, which can lead to dysuria):

1.10.1. Local irritants (e.g., soaps, douches, vaginal lubricants, spermicidal gels, contraceptive foams and sponges, tampons and sanitary pads)

1.10.2. Drug/herb-related (e.g., dopamine, cantharidin, ticarcillin, penicillin-G, cyclophosphamide, saw palmetto, pumpkin seeds).

1.11. Psychiatric-related (do not cause the symptom, but rather heighten awareness of normal and abnormal sensations):

1.11.1. Depression

1.11.2. Somatization disorder (urethral syndrome).

2. SCOPE

2.1. Telehealth services in DHA licensed Health Facilities.

3. PURPOSE

3.1. To support the implementation of Telehealth services for patients with complaints of Dysuria in Dubai Health Authority (DHA) licensed Health Facilities

4. APPLICABILITY

4.1. DHA licensed physicians and health facilities providing Telehealth services.

4.2. Exclusion for Telehealth services are as follows

- 4.2.1. Emergency cases where immediate intervention or referral is required
- 4.2.2. Prescribe Narcotics, Controlled or Semi-Controlled medications

5. RECOMMENDATION

5.1. Virtual Clinical Assessment

5.1.1. History — Important questions relate to the presence of symptoms within and outside of the genitourinary tract such as:

- a. The medical history should characterize the timing, persistence, severity, duration, and exact location of the dysuria. Pain occurring at the start of urination may indicate urethral pathology; pain occurring at the end of urination is usually of bladder origin.
- b. Systemic symptoms can help identify the cause of the dysuria. Fever, rigors, myalgia, headache, nausea, and vomiting often suggest an infectious cause and an upper UTI (e.g., pyelonephritis, especially if flank pain is present). Sudden onset of colicky groin or flank pain may indicate urolithiasis.
- c. Medication use, procedural history can help identify the cause of dysuria. In women, the history should also include the presence of vaginal discharge or irritation, most recent menstrual period, and type of contraception used.

- d. Local exposures - exposure to chemicals, such as detergents, fabric softeners, perfumed soaps, and bubble baths, may irritate the mucosal lining of the urethra or bladder.
- e. Trauma - local trauma - A negative history for injury may not be accurate, however, because most traumas are not recalled by young patients or, in the case of masturbation or abuse, may be denied.
- f. Sexual activity - The detection of sexually transmitted infections, a common cause of dysuria will be facilitated by obtaining a history about the nature and extent of sexual activity; however, a denial of sexual activity does not exclude this possibility.
- g. A history of conjunctival erythema, oral lesions, joint pain or swelling, and/or a generalized rash suggests systemic inflammatory or infectious conditions, such as Stevens-Johnson syndrome (SJS), reactive arthritis, Behçet syndrome, or varicella. Specific combinations of history help to distinguish among these conditions.
- h. Duration and onset of symptoms are important. UTIs are commonly associated with a rapid onset of symptoms, while STDs and urethritis are associated with a more gradual onset over days. Post-coital cystitis typically develops within a few days of intercourse. Vaginitis can have an insidious onset and can develop over weeks to months.

- i. External dysuria in women (i.e., urine irritating the inflamed genital organs) may suggest a gynaecological cause such as vaginitis, while in men it can suggest balanitis. Internal dysuria (i.e., pain felt in the urethra) in both genders is most commonly caused by UTIs, cystitis, or urethritis. Pain at the onset of urination is often urethral in origin, while suprapubic pain often originates from the bladder.
- j. Cloudy or malodorous urine or gross haematuria often suggests an infectious cause. However, it is important to bear in mind that other important diagnoses such as malignancies, benign prostatic hyperplasia (BPH), interstitial cystitis, trauma, and urolithiasis may also cause haematuria. History of hematuria should be considered a red flag, so urological malignancies are not missed.
- k. Accompanying lower urinary tract symptoms may aid diagnosis. Presence of voiding symptoms such as a weak stream, hesitancy, intermittency, and dribbling is often the result of BPH (in men) or urethral stricture or stenosis. Occasionally, voiding symptoms may be due to decreased bladder contractility secondary to neurological causes. The presence of storage symptoms (i.e., frequency and urgency) in both genders can be secondary to urolithiasis, interstitial cystitis (characterized by daytime and night-time urinary frequency,

urgency, and pelvic pain of unknown etiology), infections, urethral hypersensitivity, or malignancy. Pneumaturia, incontinence, or passing debris in the urine suggests a urinary fistula.

- I. Rectal or perineal pain and discomfort in men suggests prostatitis, although it is important to exclude other causes of rectal pain such as tumours or anal fissures.

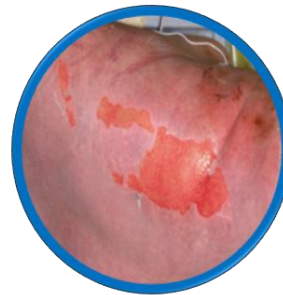
6. RED FLAGS

- 6.1. Dysuria in isolation rarely warrants emergency action but accompanying features such as:
 - 6.1.1. Fever
 - 6.1.2. Flank pain or tenderness
- 6.2. Haematuria - require investigation to exclude urological malignancy. Malignancy should be assumed until shown otherwise.
- 6.3. Pregnancy should be excluded in women, as an untreated urinary tract infection (UTI) is associated with premature labour and low-birthweight babies.
- 6.4. Dysuria in patients with diabetes or who are immunosuppressed.
- 6.5. Pneumaturia (i.e., passage of gas or air in urine) should lead to investigation of possible causes such as malignancy or inflammatory bowel disease (colovesical fistula).

6.6. Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) - are severe mucocutaneous reactions, most commonly triggered by medications, characterized by extensive necrosis and detachment of the epidermis, which may affect the mucous membranes throughout the body; this produces conjunctivitis, oral ulceration, and urethritis. Although dysuria may be present, the primary finding is a rash consisting of ill-defined, coalescing erythematous macules with purpuric centers, although many cases of SJS/TEN may present with diffuse erythema.



Stevens-Johnson Syndrome



Toxic Epidermal Necrolysis

7. DIFFERENTIAL DIAGNOSIS

- 7.1. Cystitis - Clinical manifestations of cystitis consist of dysuria, urinary frequency, urgency, and/or suprapubic pain.
- 7.2. Urethritis – usually associated with frankly purulent urethral discharge
- 7.3. Pyelonephritis - Symptoms classically include fever, chills, flank pain, costovertebral angle tenderness, and nausea/vomiting. Atypical symptoms have also been described, with some patients complaining of pain in the epigastrium or lower abdomen.

- 7.4. Vulvovaginitis - Women with vaginitis often describe external dysuria, as well as vaginal irritation or discharge
- 7.5. Balanitis - The symptoms of balanitis generally evolve over three to seven days. It often presents as pain, tenderness, or pruritus of the glans and/or foreskin
- 7.6. Acute prostatitis - may have deep perineal pain and obstructive urinary symptoms
- 7.7. Benign prostatic hyperplasia - Increased daytime frequency, nocturia, urgency, and urinary incontinence. Slow urinary stream, splitting or spraying of the urinary stream, intermittent urinary stream, hesitancy, straining to void, and terminal dribbling
- 7.8. Epididymo-orchitis - may have localized testicular pain
- 7.9. Urolithiasis - Pain is the most common symptom and varies from a mild and barely noticeable ache to discomfort that is so intense that it requires parenteral analgesics. The pain typically waxes and wanes in severity and develops in waves or paroxysms. Paroxysms of severe pain usually last 20 to 60 minutes. Haematuria, nausea, vomiting are other associated symptoms. Lesions from herpes simplex virus of the vulvar or penile area may cause dysuria
- 7.10. Interstitial cystitis – patients may have suprapubic or abdominal pain related to bladder filling. These patients nearly always report urinary frequency and urgency, whereas dysuria is variable.

8. INVESTIGATIONS

8.1. Urinalysis

8.1.1. Urinalysis is the most useful test in a patient with dysuria; most studies have used dipstick urinalysis. Multiple studies of women with symptoms suggestive of a UTI have demonstrated that the presence of nitrites is highly predictive of a positive culture (PV+ = 75% to 95%); dipstick showing more than trace leukocytes is nearly as predictive (PV+ = 65% to 85%); and the presence of both is almost conclusive (PV+ = 95%). Urinary nitrites may be falsely negative in women with a UTI. Few studies specifically address the value of urinalysis in men with dysuria, but evidence suggests similar value to the combination of leukocyte esterase, nitrites, and possibly blood. Leukocyte esterase or pyuria alone with isolated dysuria suggests urethritis.

8.2. Urine Culture

8.2.1. Any patient with risk factors for a complicated UTI or whose symptoms does not respond to initial treatment should have a urine culture and sensitivity analysis.

8.3. Other investigations:

8.3.1. Patients with suspected pyelonephritis should have renal function assessed with serum creatinine measurement, and electrolyte levels should be measured if there is substantial nausea and vomiting.

- 8.3.2. Blood cultures are usually not necessary but can be obtained in patients with high fever or risk of infectious complications which warrants referral to Family Physician.
- 8.3.3. In women with vaginal symptoms, secretions should be evaluated with wet mount and potassium hydroxide microscopy or a vaginal pathogens DNA probe which warrants referral to Family Physician.
- 8.3.4. Suspected STIs patients should also be referred to Family Physician.
- 8.3.5. Prostate-specific antigen level is transiently elevated during acute prostatitis and should not be measured in patients with acute inflammatory symptoms.
- 8.3.6. Imaging is not necessary in most patients with dysuria, although it may be indicated in patients with a complicated UTI, a suspected anatomic anomaly (e.g., abnormal voiding, positive family history of genitourinary anomalies), obstruction or abscess, relapsing infection, or hematuria. Ultrasonography is the preferred initial test patients with obstruction, abscess, recurrent infection, or suspected kidney stones, because it avoids radiation exposure.

9. MANAGEMENT

- 9.1. Refer to APPENDIX 1 for the Virtual Management of Dysuria Algorithm
- 9.2. In patients with unremarkable teleconsultation, initial treatment for dysuria is usually empiric, and the choice of therapy will depend on the suspected diagnosis based on presenting signs, symptoms, and risk factors.

- 9.3. Variable symptoms of dysuria with frequency and urgency as primary symptoms – conservative management like
- 9.3.1. Increase the fluid intake
 - 9.3.2. Pelvic floor exercises History of topical use of chemicals/irritants
 - 9.3.3. Discontinue use of offending agents Conservative management with OTC
 - 9.3.4. Ibuprofen 400mg three times a day for 3 to 5 days
 - 9.3.5. Alkalisng drugs/ sachets – 1 sachet 3 to 4 times a day
- 9.4. If antibiotics is needed:
- 9.4.1. For Cystitis, acute uncomplicated or acute simple (infection limited to bladder and no signs/symptoms of upper tract, prostate, or systemic infection), treatment with first line antibiotic:
 - a. Trimethoprim 200 mg twice a day for 7 days
 - b. Nitrofurantoin – if eGFR ≥ 45 ml/minute Oral: 100 mg twice daily for 5 to 7 days (or if unavailable 50 mg four times a day).
 - 9.4.2. Second line antibiotic:
 - a. Amoxicillin-clavulanate (500 mg twice daily) for five to seven days
 - b. Cefpodoxime (100 mg twice daily), cefdinir (300 mg twice daily), and cefadroxil (500 mg twice daily), each given for five to seven days.

10. REFERRAL CRITERIA

- 10.1. Refer to Family Physician/Specialist

- 10.1.1. Vaginal discharge or irritation
- 10.1.2. History of sexually transmitted infections
- 10.1.3. Voiding symptoms such as a weak stream, hesitancy, intermittency, and dribbling
- 10.1.4. Rectal or perineal pain and discomfort
- 10.1.5. Suspected pregnancy
- 10.1.6. Pneumaturia should lead to investigation of possible causes such as malignancy or inflammatory bowel disease (colovesical fistula)
- 10.1.7. Recurrent dysuria
- 10.1.8. Dysuria in diabetic or immunosuppressed patients
- 10.1.9. Patient not responding to medical treatment
- 10.2. Refer to ER
 - 10.2.1. If dysuria is associated with the below symptoms
 - a. Severe flank pain or tenderness
 - b. Fever, rigors, myalgia, headache, nausea, and vomiting
 - c. Haematuria
 - d. Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN)

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APPENDIX 1 – VIRTUAL MANAGEMENT OF DYSURIA ALGORITHM

