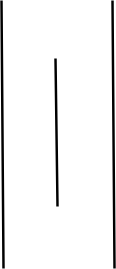
**NATIONAL ACADEMY OF MEDICAL SCIENCES**

**BIR HOSPITAL NURSING CAMPUS**

**MAHABOUDHA, KATHMANDU**



**CASE STUDY ON**

**“URINARY TRACT INFECTION”**

**Submitted to : Submitted by :**

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**Submitted on:**

# **ACKNOWLEDGEMENT**

During Seventh week of Medical Surgical Nursing Practicum, as per the requirement of curriculum of Bachelor of Science in Nursing 2nd year I have completed my case study on ‘Urinary Tract Infection’ in medical ward. And during my posting I have tried my best not only to gather, interpret the information and provide care but also to face challenges regarding the topic and compare it in theoretical as well as practical aspect.

This completed case study is possible only because of the guidance, support, supervision and co-operation of several intellectual personnel whom I am really grateful. So, I would like to express my sincere thanks to all those people who contribute their effort in the completion of case study.

Foremost, I would like to thank the National Academy of Medical Sciences, Bir Hospital for including case study in the curriculum. I would like to express my sincere gratitude to our campus chief Ms. Bandana Thapa, our coordinator mam, Ms. Purna Devi Maharjan and respected teachers, Ms. Sneha Shrestha, and Ms. Rajina shakya for their valuable suggestions, encouragement, regular guidance and supervision during the entire period of this case study. I would also like to express my deep and sincere thanks to the librarian for providing resources and support for this case study.

At last, but not least, I would like to extend my profound gratitude to the patient, visitors, doctors and all the nursing staff for providing detailed knowledge, cooperation, inspiration and full support to complete my case study.

Mr. Bipin Gautam

**BSc Nursing 2nd year**

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# **BACKGROUND**

This case study is on ‘Urinary Tract Infection which is prepared as a partial fulfillment of Bachelor of Science in Nursing Curriculum of second year, MEDICAL SURGICAL NURSING PRATICUM.

We have been assigned to medical ward of Bir Hospital for 4 weeks. According to the curriculum, we must undertake one specific disease for case study and provide comprehensive and holistic nursing care to the patient by applying Nursing theory, nursing process based on knowledge. It aims to enable the BSc Nursing students to get thorough knowledge about disease, pathophysiology and its management in hospital setting as well as in any situation.

The post curriculum of the NATIONAL ACADEMY OF MEDICAL SCIENCES demands a case study on a specific disease. My patient is of age 45 years and has been diagnosed with ‘Urinary Tract Infection’ . Thus, I have selected him for providing care with promotive and rehabilitative concepts. Hence, this case as case study report is developed during my Medical Surgical Nursing Practicum. I have selected this case, as UTI is a common disease in all age groups with varying clinical presentation, different approaches to management and quite a few complications both during presentation and management.

UTI is a bacterial infection that affects any part of the urinary tract. UTIs are caused by pathogenic microorganisms.

The main causative agent of UTI is Escherichia coli.

I have chosen a case of Urinary Tract Infection for case study. I have done observation of the case, observed the features of patient, provided nursing care, informal health teaching about disease condition, long term care and medication to patient and family and provided information on health promotion activities.

Thus, this type of case study will help a student to upgrade the knowledge and skill.

**Rational**

**Objectives of Case Study**

**General Objective:**

* To provide holistic care to patient through nursing process using appropriate nursing theories, and also considering patient socio-cultural background and traditional philosophy and practices with the help of knowledge from basic science and fundamental nursing knowledge.

**Specific Objectives:**

1. To gain knowledge about specific disease.
2. To identify the cause, clinical features and diagnostic evaluation of gall bladder polyp.
3. To establish rapport and gain the trust and co-operation of the patient and family members.
4. To gather factual health assessment of the patient and perform proper assessment of the patient.
5. To gain new facts and ideas about the disease.
6. To gain better and clearer understanding on the nature, course, physical and emotional changes and signs and symptoms relevant to this disease.
7. To disseminate information to the patient as well as her relative about the illness and how to care for the patient.
8. To evaluate daily progress of patient health and effectiveness of treatment.
9. To minimize the stress of the patient and her family by providing adequate information and using appropriate diversion therapy.
10. To be able to formulate related nursing diagnosis from the patient health data and the current problems, the patient was experiencing and to come out with different nursing interventions effective for the patient to improve and progress on the most possible time.
11. To involve patient and her family members in discharge planning and follow up visits.
12. To get the information about the topic related research and compare to book picture and patient.

# **HISTORY TAKING**

## **1. BIO-DEMOGRAPHIC DATA:**

* NAME: Kumbha Bohora
* AGE: 45 years
* SEX: Male
* ADDRESS: Simikot, Humla
* RELIGION: Hindu
* EDUCATION: 10 passes
* OCCUPATION: Animal husbandry and farming
* MARRITAL STATUS: Married
* DATE OF ADMISSION: 2081/5/26
* INPATIENT NO.: 230974
* WARD: Male Medical Ward
* BED NO: 183
* ECONOMIC CLASS: Middle class
* LANGUAGE: Nepali
* SOURCE OF INFORMATION: Patient and his wife
* DATE OF DISCHARGE: 2081/5/
* DIAGNOSIS: Urinary Tract Infection

**2. CHIEF COMPLAIN AT THE TIME OF ADMISSION:**

* Fever since 3 days
* Vomiting since 3 days
* Burning micturition since 3 days
* No bowel movement since 3 days
* Left Flank pain since 3 days

**Vitals at the time of admission**

|  |  |  |  |
| --- | --- | --- | --- |
| Temperature | Pulse | Respiration | Blood pressure |
| 102.7 F | 88b/m | 20b/m | 100/60 mm of Hg |

### SOURCE OF HISTORY: Patient, Patient’s chart and OPD report, his son.

1. **History of present illness**

45 years old male without any past history of other comorbidities enter to Emergency room of Bir Hospital on 2081/5/25 with chief complaints of fever since 3 days, with maximum temperature of 103 F. He also has vomiting containing food particles without blood since 3 days. He also explained burning sensation while micturition. He also has history of vague,dull and non radiating pain over left flank region since last three days .The patient also denies any unintentional weight loss, jaundice or changes in the color of his stool or urine. On 2081/5/26, He was admitted in male medical ward Bir Hospital.

**4.Current medication**:

1. Inj. Paracetamol 1gm x iv x QID
2. Inj. Ceftriaxone 1gm x iv x BD
3. Inj. Pantocid 40gm x iv xBD
4. Syp. Potklor 15ml x TDS( to increase potassium level)
5. Inj. Ondem 4mg x iv x SOS{Given @ 1pm and @6pm at admission day}

The reason for administration of ondem was due to vomiting of patient at admission day.

## **5.PAST HEALTH PROBLEMS**

* **Previous** **hospitalization:** Yes, First at Spinal injury rehabilitation Kavre, due to Spinal cord contusion at C3/C4 level on 2081/9/28 and again at KMC hospital due to difficulty micturition and was diagnosed as urethral stricture s/p BMG URETHROPLASTY on 2081/2/5.
* **History of surgery:** BMG URETHROPLASTY on 2081/2/5.
* **Injury and Accidental history:** On 2080/9/25 he has been injuried by a falling stone at back just above neck at cerebellum area.
* **Drug allergy:** No
* **Immunization history:** Patient is immunized against Covid 19 and tetanus
* **Any childhood illness:** Not relevant

## **6. PERSONAL HISTORY**

**1. Personal health history**

a. Food likes and dislike – avoids spicy food

b. Usual meal timing – 2-3 times a day

c. Food allergies – none

d. Dietary habit- 3 times/day

e. Meal timing- 10 am, 2 pm, 7 pm

f. Nutritional pattern- egg, milk, rice,daal and vegetables

**2. Personal care habits**

a. Brushing and bathing – Daily once day and thrice a week.

b. Elimination habits - normal before urethroplasty but then frequent urination and bowel movement only 1/2 times a week.

c. Exercise – he has no habit of doing exercise.

d. Rest and sleep – 7 to 8 hours

e. Recreational activities – talking with friends and family.

f. Smoking/alcohol/chewing tobacco- no.

**7. Family History**

|  |  |  |
| --- | --- | --- |
| Disease | Paternal Side | Maternal Side |
| Diabetes | father | no |
| Cancer | no | no |
| COPD | no | no |
| Hypertension | no | mother |
| Infectious disorder | no | no |
| Genetic disorder | no | no |

## **6. FAMILY HISTORY:**

• Type of family: Nuclear family

• No. of family members: 5

• Care giver and support system: himself and his wife.

1. **Family Tree**

Age 68 years

Hypertension

Age 69 years

Diabetes

Age 45 years

Uti

Age 12 years

Age 18 years

Age 44 years

Death

Patient

Female

Male

INDEX

## **8. SOCIO-ECONOMIC AND ENVIROMENTAL HISTORY**

• Type of house- cemented house with adequate ventilation consisting of 2 rooms with separate kitchen.

• Source of drinking water- tap water.

• Drainage- closed

• Type of latrine- water sealed latrine

• Waste disposal- burning

• Types of fuel used for cooking- gas cylinder.

• Pets in home- no any

• Accessibility of health service- Primary health care center nearby home

• Average income: Rs 70,000 per month

## **9. CULTURE AND TRADDITIONAL HEALTH PRACTISE**

• Self-medication or home remedies- no any

• Prefers to visit traditional healer or seek medical help- he seeks medical help

## **10. PSYCHOSOCIAL HISTORY:**

• Any psychological stressors present: No.

• Family relationship: good relationship with the family member.

• Client position in the family: Head

# **PHYSICAL EXAMINATION**

**On 2081/5/27**

1. **Anthropometric Measurement**

* Height: 5’3 feet
* Weight: 63 kg
* BMI: 24kg/m²
* Blood pressure: 100/60 mm of Hg
* Pulse: 88b/m
* Respiration: 20b/m
* Temperature: 98.4º
* O2 saturation: 98%

1. **General appearance**

* Level of consciousness - conscious.
* Gait - straight and erect gait.
* Facial Expression – Active, eyes are alert
* Hygiene status - maintained.
* Nutritional status - appears healthy.
* Mood, memory, judgement, thought, quality of speech and appropriateness of the client response-no mood changes, appropriate.
* Note body and breathe odor: foul smelling was not present.

1. **Skin**

Inspection

Color (jaundice, pallor, cyanosis): Pallor

Lesion: Not present

Patches: absence of any patches

Skin texture: Normal

Edema: absent

Pustules/ blisters: No

Cuts/ bruises/ abrasion: No

Excess sweating/ dehydration: No

Hair distribution: Normal

Birth marks: Not Present

Palpation

Temperature: Normal

Texture: Hydrated

Edema: absent

1. **Head**

Inspection

Shape/ size: Normal

Scalp & color of hair: Black and white Color hair

Hygiene (pediculosis, lice, dandruff): No pediculosis and dandruff

Movement of head/ head holding: Can move head normally

Palpation

Nodules/ masses: No nodules or masses present

Previous scar of injuries/ operation: Not present

1. **Face**

Inspection

Shape: Oval face

Symmetrical/ asymmetrical: Symmetrical

Paralyze (facial): Not present

Palpation

Swelling, tenderness, depression of face: Not present

1. **Sinuses**

Palpation

Tenderness: No tenderness in frontal and maxillary sinuses

1. **Eyes**

Inspection

Eye lid swelling: No eye lid swelling

Squint eyes: No

Eye brow symmetry: Symmetrical in size and equal distribution in both side

Eye lashes (entropion, ectropion, stye): No infection and stye

Eyes (shape and size): Normal

Infection/ discharge: Not present

Conjunctiva (jaundice and anemia): pale sclera

Pupil (PERRLA: Pupil equal, round, react to light and accommodation): As the torch approaches the eye, the pupil constricts and as torch is removed the pupil dilate

Vision problem: No

Strabismus/ nystagmus: No

Blockage of nasolacrimal duct: No blockage of nasolacrimal duct

Blinking reflex: Normal

1. **Ears**

Inspection

Position of ear (observe from front and draw line from outer canthus of eye to tip of the ear): Normal

Shape and size: Normal shape and size

Tympanic membrane: No perforation, lesion and bulging

Discharge/ bleeding/ foreign bodies: No discharge, bleeding, foreign bodies

Palpation

Tenderness around the pinna: No tenderness

Mastoid area: No tenderness

Hearing tests

1. Rinne test: air conduction is greater than bone conduction.
2. Weber test: sound is heard equally in both ears
3. **Nose**

Inspection & Palpation

Location /Shape/size: Septum is centrally located, No any deviated nasal septum.

Nostril: Nostril is uniform in size and no flaring

Discharge/bleeding/lesion/potency: No discharge, bleeding

Smell: Good smelling power

Deviated nasal septum: No deviation of nasal septum, no any polyps

Nasal canal: Dark pink mucosa membrane, no any discharge or foreign bodies

1. **Mouth**

Inspection

Lips (color/moisture/cracks/dehydration): Normal

Buccal mucosa (color, lesion, moist, dry): Normal

Tongue (Color, papillae, tremors): Pink tongue

Teeth and gums (number of teeth, dental carries, gingivitis, missing teeth): Yellowish teeth, No missing teeth and presence of dental carries

Palate and uvula (intact uvula centrally located): Intact and centrally located

Tonsils (size, color): No tonsillitis

Gag reflex: Present

Smell

No foul odor nor smell of alcohol

1. **Neck**

Inspection

Position of head and neck: No tilting of head

Skin folds: Not present.

Rashes/masses/scar/lump /swelling: No present

Movement (Range of movement): Can move easily, no stiffness and tenderness.

Jugular vein: Not dilated.

Enlargement of thyroid gland: Not visible and enlarge.

Palpation

Back of the neck: No tightness of muscle, stiffness, and tenderness along the spine

Thyroid gland, cervical nodes: Not present.

1. **Chest**

Inspection

Size/Shape/Symmetrical movement: Normal, Symmetrical in size and sternum is located at the midline.

Equal movement of chest during breathing: Equal movement

Peripheral cyanosis: Not present.

Use of accessory muscle: No

Palpation

Tenderness: Not present

Lumps: Not present

Chest for expansion: Even expansion of the chest on both side

Percussion

resonant sound present in lungs

Auscultation

Presence of abnormal sound (rales, rhonchi, wheezing): absent

1. **Cardiovascular system**

Inspection

Color and temperature of extremities: No cyanosis, warm extremities

Capillary refill time: 3 second

Clubbing/cyanosis: Not present.

Enlargement neck vein: No enlargement

Auscultation

Heart sound, rate rhythm, murmur sound: Lub-dub sound present, Normal rate and rhythm

Apical pulse: 82 b/m

1. **Abdomen**

Inspection

Size/ shape/ skin color: A rounded, symmetrical contour of the abdomen.

Umbilical cord/hernias/prominent vein/masses: Not present.

Auscultation

Bowel sound/frequency of peristalsis movement: Presence of bowel sound , Hyperactive bowel sounds

Percussion

Dullness sound is present.

Palpation

Tenderness: yes

Enlarged liver/ spleen: No

Masses: No

1. **Genito-urinarysystem**Patient reports no abnormal discharge; no redness or swelling noted.
2. **Musculoskeletal system**

Upper extremities

Symmetrical size: Symmetrical in size

Fingers (syndactyl/polydactyl): No syndactyl/polydactyl

Lower extremities

Symmetrical: Normal

Scar: Not present

Toes, in toeing, out toeing, bow legs, knock knee: Normal

Solar crease: Normal

Range of motion: Normal

Knee reflexes: Present

Hip dislocation: Not present.

Tenderness of joint: Not present.

Swelling: absent in both limbs

Balance and coordination: Difficulty in mobility

1. **Back**

Inspection

Position of spine: Normal

Kyphosis/lordosis/Scoliosis: No

1. **Neurological system**

Sensory function (hearing, vision, light to touch, pain, sensation): Normal except sensation is diminished in left sides.

Muscle tone, balance, coordination: Normal

**Findings of physical examination**

**On head-to-toe examination**

1. General appearance seemed composed but facial expression showed a little worried, tired look.

2. Presence of dental carries

3. Presence of Hyperactive bowel sounds.

4. Left flank pain

5. Burning micturition

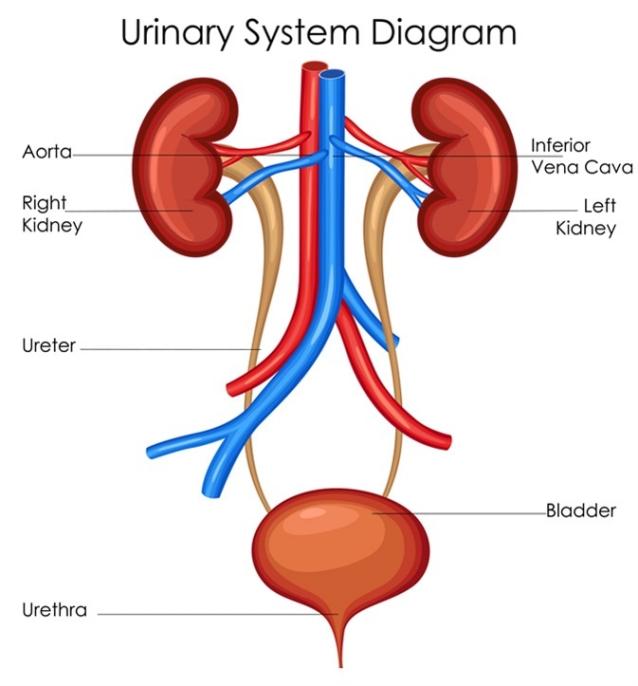
6. Frequent awakening at night for urination.

7.Sensation is diminised in Left arm and leg, according to patient it happened after he got hit by the stone on 2080/9/25.

**Developmental task and its Achievement**  
As the patient is 45 years old, he belongs to the middle adulthood, which starts from 40 years of age and ends at 59 years of age.  
According to Erik Erikson’s psychosocial development theory, it’s Generality vs Stagnation.

|  |  |  |
| --- | --- | --- |
| **S.N.** | **According to Book** | **According to the patient** |
| 1. | Achieving adult civic responsibilities. | The patient has achieved his civic responsibilities by utilizing his voting rights, following traffic rules, laws and order of the country and participating in community and  civic activities to contribute to society. |
| 2. | Establishing and maintaining a standard of living. | Patient has achieved financial stability and has provided a standard of living for  oneself and his family. |
| 3. | Helping teenage children become responsible and happy adults. | Patient has nurtured and guided his children to become independent and handed over his responsibility to them. |
| 4. | Developing leisure activities | Patient has developed his leisure activity of working in the garden, visiting temples,  etc. |
| 5. | Relating to one’s spouse as a person. | Patient has maintained a loving and trustful relationship with his spouse. |
| 6. | Accepting and adjusting to physiological changes of middle age | Patient has developed a positive attitude towards his aging process. |
| 7. | Adjusting to aging  parents. | Patient has taken a caregiving role for his aging parents by providing physical, emotional and financial support. |

# **ANATOMY AND PHYSIOLOGY OF URINARY SYSTEM**



## **a.** **Kidney**

* About the size of a clenched fist and weighs of 150gm in male and 135gm in female.
* Bean shaped and located inside the abdomen on either side of vertebral column retroperitoneally.
* It extends from thoracic (12th vertebral to 3rd lumbar vertebra)

**Function**

* Elimination of organic waste products as urea, uric acid, creatinine breakdown of hemoglobin and hormones.
* Elimination of toxic substance such as drug pollutants, chemicals.
* Blood pressure regulation by secreting enzyme renin.

## **b. Ureter**

* Muscular tube of length 25cm and breadth 3mm.
* It begins at renal pelvis and ends into urinary bladder at the upper border of trigone.
* Retroperitoneal structure that helps in passage of urine from kidney to bladder by peristaltic movement.

**Function**

* To propel the urine from the kidney into the bladder by peristaltic contraction of the muscular wall.

## **c. Urinary bladder (Storehouse of urine)**

* Roughly pear – shaped hollow muscular organ located in the pelvic cavity and it can become an abdominal organ when it is distended by urine.
* Capacity of 500ml

**Function**

* Serve as the reservoir of urine before it leaves the body.
* Expels urine from the body with help of urethra.

## **d. Urethra**

* Canal extending from the neck of the bladder to the exterior.

**Female urethra (4cm)**

* Homologous to prostatic part of male urethra.
* Begins at the neck of bladder and opens in external urethra orifice in the vestibule.
* Conducts urine only.

**Male urethra (20cm)**

* Begins at the neck of bladder, runs inside the prostate and the penis and opens into the external urethral orifice at the tip of penis.
* Conducts both urine and semen.

**Function**

* Acts as passageway for eliminating urine from body.
* In male, urethra acts as a terminal portion of the reproductive tract and serves as the passageway for the reproductive tract.

# **DISEASE PROFILE**

## **Introduction**

Urinary Tract Infection is a bacterial infection that affects any part of the urinary tract. UTIs are caused by pathogenic micro – organisms. The main causative agent is Escherichia Coli. Although urine contains variety fluids, salts and waste products, it does not usually have bacteria in it. When bacteria get into the bladder or kidney and multiply in the urine, they may cause a UTI.

## **Classification**

1. Upper urinary tract infection

* Pyelonephritis – inflammation of the renal pelvis, parenchyma.
* Interstitial nephritis – inflammation of the kidney.

1. Lower urinary tract infection

* Cystitis – inflammation of the bladder.
* Urethritis – inflammation of the urethra.

1. Uncomplicated UTI

* Infection in a healthy, non-pregnant, pre – menopausal female patient with anatomically and functionally normal urinary tract.

1. Complicated UTI

* Infection associated with factors increasing colonization and decreasing efficacy of therapy.

1. Recurrent UTI

* Occurs after a documented infection that has resolved. Defined as 2 or more infections in 6 months, or 3 or more than three in 12 months.

1. Reinfection UTI

* A new event with reintroduction of bacteria into urinary tract or by different bacteria.

# **EPIDEMIOLOGY**

According to Global BURDEN of DISEASE of UTI in 2019 more than 404.6 million individuals had UTIs globally and nearly 236,78 people died of UTIs.

***Retrieved from:***

[ <https://www.healthdata.org/research-analysis/gbd>]

The case of UTI among Nepalese patients attending general hospitals range from 23.1% to 37.4%. Bacteria are the common etiology of UTIs accounting more than 95% of the cases. Escherichia Coli is the most common causative organisms of UTI and is solely responsible for more than 80% of UTI.

***Retrieved from:***

[https://bmcinfectdis.biomedcentral.com/]

# **PREDISPOSING FACTOR**

* Immunocompromised state
* Diabetes
* Elderly
* Menopause
* Pregnancy
* Smoking
* Alcohol consumption
* Long term drug abuse
* Sexual activity
* Genetic factors
* Poor personal hygiene
* Obesity

**ETIOLOGY**

|  |  |
| --- | --- |
| **BOOK PICTURE** | **PATIENT PICTURE** |
| Causative organism (Bacteria) | Present |
| Route of entry   * Urethra * Circulating blood | * Present * Absent |
| Incomplete bladder emptying | Present |
| Infrequent voiding | Present |
| Constipation | Present |
| Neurogenic bladder | Absent |
| Catheterization, urinary drain tube | Absent |
| Bacterial colonization | Present |

# 

# **PATHOPHYSIOLOGY**

**Predisposing factor Ex** Immunocompromised state, urinary incontinence

Inflammation of the lining of the urinary tract

The body responds by producing physiologic change aimed at elevating body temp

Narrowed urine passage

Poor emptying of the bladder

Frequent urination and urgency

Adhere to mucosal surface

Bacterial Invasion

Cytokine and prostaglandin release

Immune response by the body (Defense mechanism of the body to foreign bodies)

Interruption in the normal homeostatic environment of urinary tract

Multiplication of the bacteria causing UTI in any part of the urinary

**Bacterial Entry**

Indwelling catheter homogeneous spread

Increased WBC subsequent to pus formation

Change in urine color

Irritation of the lining of the urinary tract

Fever

# 

# **CLINICAL MANIFESTATION**

|  |  |
| --- | --- |
| **BOOK PICTURE** | **PATIENT PICTURE** |
| Burning sensation during micturition | Present |
| Frequent urination | Present |
| Loss of appetite | Absent |
| Nausea and vomiting | Present |
| fever | Present |
| Hematuria | Absent |
| Foul smelling urine | Absent |
| Cloudy urine | Absent |
| Tenderness over one or both kidney | Absent |
| Nocturia | Present |

# 

# **DIAGNOSTIC EVALUATION**

|  |  |
| --- | --- |
| **BOOK PICTURE** | **PATIENT PICTURE** |
| History taking | Done |
| Physical examination | Done |
| Urine routine examination | Done |
| Urine culture | Done |
| Blood investigation | Done |
| USG(abdomen+ pelvis) | Done |
|  |  |

**Laboratory Studies**

Date:2081/05/26

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Test** | **Result** | **Unit** | **Ref Range** |
| 1 | Complete Blood count |  |  |  |
| 2 | Total leukocyte count | 5400 | /cumm | 4000-11000 |
| 3 | Differential Count |  |  |  |
| 4 | Neutrophil | 66 | % | 40-75 |
| 5 | Lymphocyte | 29 | % | 2-45 |
| 6 | Eosinophils | 04 | % | 1-4 |
| 7 | Monocyte | 01 | % | 2-6 |
| 8 | Basophil | 00 | % | 0-1 |
| 9 | Haemoglobin | 10.2 | gm/dl | 11-18 |
| 10 | PCV | 31.2 | % | 35-54 |
| 11 | Platelet | 254000 | /cumm | 150000-500000 |
| 12 | RBC | 3.36 | mill/cumm | 0-6.5 |
| 13 | MCV | 93.0 | H | 76-96 |
| 14 | MCN | 30.4 | pg | 27-32 |
| 15 | MCHC | 32.4 | % | 30-35 |

**Renal Function Test**

**2081/5/26**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SN** | **Test** | **Result** | **Unit** | **Ref Range** |
| 1 | Urea | 32 | mg% | 20-40 |
| 2 | Creatinine | 1.0 | mg% | 0.4-1.4 |
| 3 | Sodium | 136 | mmol/L | 135-155 |
| 4 | Potassium | **2.8** | mmol/L | 3.5-5.5 |
| 5 | S. Bilirubin - Total | **1.92** | Mg/dl | 0.2-1.0 |
| 6 | S. Bilirubin - Direct | 0.2 | Mg/dl | 0-0.2 |
| 7 | Alkaline Phosphate | 60 | U/L | 53-128 |
| 8 | SG01 | 30 | U/L | 5.0-40.0 |
| 9 | SGP1 | 11 | U/L | 5.0-35.0 |
| 10 | Protein | 6.4 | gm% | 6-8 |
| 11 | Albumin | 3.7 | Gm% | 3.4-4.8 |
| 12 | Amylase | 33 | IU/L | 5.0-100 |

**USG Report (081/5/26)**

**Liver:** Normal in Size, Outline and echotexture

No Focal tension seen.

**GB:** Normal, No calculus seen

**CBD:** Normal, No calculus seen

**Pancreas:** Normal

**Spleen:** Normal

**Kidney:**

**Lt:** Normal in size, outline, and echotexture. Ureter not dilated. No calculus seen.

**Rt:** Normal in size, outline and echotexture. Ureter not dilated. No calculus seen.

**Urinary Bladder:** Normal in outline and extensibility. No focal lesion seen.

**Impression**

1) Normal scan.

**Urine Culture (081/4/9)**

|  |  |
| --- | --- |
| **Test** | **Result** |
| Colony Count | >100000 CFU/ml of urine |
| **Urine C/S** | |
| Organism Isolated | Enterococcus Spp (After 24 hours of aerobic incubation at 37° C) |
| **Sensitive to**  Linezolid  Vancomycin | **Resistant to**  Amoxicillin Norfloxacin  Ampicillin Penicillin  Levofloxacin  Nitrofurantoin  Norfloxacin |

**Urine Routine Examinaiton**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | **Result** | **Unit** | **Ref Range** |
| **Physical Exam** | | | |
| Colour | Light Yellow |  |  |
| Transparency | Clear |  |  |
| PH | Acidic |  |  |
| **Chemical Exam** | | | |
| Albumin | Nil |  |  |
| Sugar | NIL |  |  |
| **Microscopic Exam** | | | |
| RBC | Not seen |  | HPF |
| PUS | **16-18** |  | 0-5 HPF |
| Epithelial Cells | 1-2 |  | HPF |
| Others | Not Seen |  | HPF |

# **PROGNOSIS**

The prognosis of a UTI is generally good, particularly with prompt and appropriate treatment. Most UTIs are successfully treated with antibiotics and symptoms typically improve within a few days of starting medication.

However, the prognosis can vary based on several factors including:

* Severity and type of UTI:

1. Simple UTIs such as uncomplicated cystitis often resolve with a short course of antibiotic. More complex UTIs such as pyelonephritis (kidney infection) may require longer treatment and can have a more variable prognosis.

* Underlying health condition:

1. Individual with diabetes, immunocompromised states or structural abnormalities of the urinary tract may experience more complication and may need more intensive treatment.

* Antibiotic resistant
* Promptness of treatment

1. Early diagnosis and treatment improve prognosis, reducing the risk of complication.

*Retrieved from:*

*[<https://www.idsociety.org/>]*

# **COMPLICATION**

* Pyelonephritis
* Sepsis
* Recurrent UTI
* Kidney damage
* Prostatitis
* Chronic UTI
* Urethral stricture

# **MANAGEMENT**

**Medical Management**

* **Prevention:**
* Drink plenty of water every day.
* Not resisting the urge to urinate.
* Wiping from front to back to prevent bacteria around the anus from entering the vagina or urethra.
* Vitamin C may function to increase urine acidity to reduce bacterial growth.
* **Diagnosis:**

1. Usually diagnosed through symptoms and urine tests including urine analysis and urine culture to identify the bacteria and determine the most effective antibiotics.

* **Antibiotic therapy**

1. Drug most often used to treat routine uncomplicated UTIs are:
2. Trimethoprim
3. Amoxicillin
4. Nitrofurantoin

* **Iv antibiotics**

1. Mostly used for complicated UTI infections that do not respond to oral therapy or that develop into pyelonephritis.

**Pharmacological** **therapy used in my patient :**

Inj. PCM x 1g x IV x QID

Inj. Ceftriazone x 600mg x IV x BD

Inj. Pantoparazole x 40mg x IV x OD

Inj. Ondem x IV x SOS

Syp. Potklor 15ml x TDS

# **DRUG** **PROFILE**

## **PANTOP**

Generic name: pantoprazole

Pantoprazole is a proton pump inhibitor. That is used to decrease the amount of acid produced in stomach.

**Mechanism of action:**

It works by inhibiting the hydrogen potassium ATPase irreversibly, the final step of gastric acid secretion in the gastric parietal cells. It inhibits both basal and stimulated gastric acid secretion.

**Indications:**

* Peptic ulcer
* Bleeding peptic ulcers
* Stress ulcers
* Gastroesophageal reflux disease (GERD)
* Zollinger Ellison syndrome

**Dose:** 20 to 40 mg

**Side effects:** nausea, diarrhoea, rash, abdominal pain, muscle and joint pain etc.

**Contraindications:** **pregnancy(C),** hypersensitivity, lactating mothers.

**Nursing considerations:**

* Take medications 1 hour before the meal.
* Take the tablet form without breaking or crushing them to protect them from molecular transformation in gastric acidic environment.
* Use cautiously in pregnancy and lactating mothers.
* Avoid aggravating

1. **ONDEM**

**Generic name:** Ondansatron

It’s the distinct class of antiemetic drugs developed to control chemo/radio therapy induced nausea & vomiting along with the post operative & disease/drug induced nausea and vomiting.

**Mechanism of action:** it works by blocking the depolarizing action of 5-HT exerted through 5-HT3 receptors in g.i.t as well as brain stem.

**Indications:**

* Chemo/radio therapy
* Post operative nausea/vomiting
* gastroenteritis

**Doses:**

* Doses vary depending on the cause. Generally, its ranges from 8-24 mg/day

**Contraindications:** hypersensitivity, concomitant use with apomorphine (may cause severe hypotension).

**Side effects:**

* Headaches, dizziness, mild constipations, abdominal discomfort, hypotension, bradycardia etc.

**Nursing considerations:**

* monitor nausea and vomiting.
* evaluate fluid and electrolyte status.
* Monitor ECG in at risk patients.
* Assess patient for fall injury if they develop side effect as dizziness.

1. **INJ –Ceftriaxone**

Generic name: ceftriaxone

Therapeutic category: 4th generation cephalosporin

**Mechanism of action:**

Ceftriaxone disrupts bacterial cell walls by binding and inhibiting transpeptidases known as penicillin-binding proteins (PBPs), which are enzymes involved in the final stages of peptidoglycan layer synthesis. This results in the lysis and death of susceptible microorganisms.

**Dosage and Route:**

Adult: - 0.5-1 g

Child: - 50-75 mg/kg/ day in IV

**Indications:**

Skin and skin structure infections, Urinary tract infections, Nosocomial pneumonia, Multiple drug resistant pneumonia, Neutropenia , Acute otitis media, Typhoid fever, Pelvic inflammatory disease, Urinary tract infection.

**Contraindications:**

Hypersensitivity, pregnancy, Renal impairment, Lactation, Hyperbilirubinemia

**Side effects:**

Head ache, fever, vaginitis, diarrhea, nausea, vomiting, elevated AST, AST, phlebitis, rash, pruritis.

**Nursing considerations:**

1. observe intravenous site for extravasation.
2. monitor signs and symptoms of hypersensitivity.
3. observe for the sign of renal hepatic or hematological dysfunction
4. observe for skin rashes.
5. measure urine output.
6. **Tab. PCM**

Generic name: Paracetamol

Trade name: Cetamol, Medomol

Classification: COX2 selective inhibitors

**Mechanism of action**

* More active inhibitor of COX in brain
* Ability to inhibit COX3
* Poor inhibitor of COX in peripheral tissues

**Indications**

* Effective for mild-moderate pain: headache, musculoskeletal pain, osteoarthritis
* Relieving fever

**Preparation**

* Tablet: 500mg
* Injection: 1gm per 100 ml
* Syrup: 120mg/5ml & 125mg/5ml
* Suppositories

**Routes and Doses**

* Adult: 500mg to 1gm orally 3 to 4 times daily
* Child: 15mg/kg/day repeated every 6 hours when necessary

**Contraindication**

* Liver disease (like jaundice)

**Adverse effects**

* Nausea, rashes, leucopenia and allergy
* Liver damage following over dose

**Nursing Considerations**

* Drug should not be taken more than 4 doses in 24 hours and for than 10 days
* Make sure patients are aware they must not exceed the recommended dose
* Monitor for sign & symptoms of hepatotoxicity if high dose or prolonged use of PCM
* Advise patients to avoid alcohols as drug overdose can occur
* Determine therapeutic response in patient
* Insert suppositories beyond the rectal sphincter