BIRZEIT UNIVERSITY

CRITICAL CARE NURSING 2

CASE STUDY 1

(AKI/HYPERKALEMIA)

STUDENT NAME: Mommad Shalan

STUDENT NUMBER :1190995

INSTRUCTER NAME : Fadi Assi

DATE : 22/1/2021

Pt Initials : A.G

Age : 75Y 10M

Sex: Male

Hospital: Ramallah medical complex Ward: ICU

Bed number 7

 Date of Admission : 13/11/2021

Informants: System , Nursing in ICU

Chief Complaints : Hyperkalemia , Dizziness , Muscle weakness .

History of Present Illness: Post covid-19 Pt , role out of pulmonary embolism , admitted to ICU as case of AKI /Hyperkalemia .

Past Medical History : DM , Lung Fibrosis naintained on O2 therapy , itubated twice , HF with preserved EF

Past Surgical History : unknown

Nutritional History: Pt used to be on regular diet .

Allergies: FREE

Personal Habits (life style) : he was own a market

Physical Assessment:

Vital Signs :

Temp:35.6

BP:96/65

SAT:90%

PR:90

Head and Face :

Pt unconscious , no cyanosis , the shape of the head is symmetric

The face skin was normal no dryness

Eyes : symmetric they are not swollen no blood in eyes eyelid opening are equal the Pt is under sedation so no reflexes was seen in the eyes

Ears : symmetric in shape and color and size there are pupil reflex

Nose: the nose is in the mid of the face the two opening of the nose is clear no upnormal discharges or blood.

Mouth and Throat : the mouth is redness no teeth the throat is normal and not inflamated no cyanosis in the lips or gums .

Neck and shoulders : normal thyroid JVP not araised shoulders are symmetric , neck is polar , central line on Rt side ROM is normal

Lungs and Thorax and Breast : nipples are symmetric present same level , no wheezes, no crepitations

Pt on BIPAP ventilator

Cardiocirculatory System : no murmur , HR is normal no cyanotic signs

Abdomen and Gastrointestinal system : inguinal hernia on the Rt side . soft , lax , no tenderness

Arms and Hands : normal ROM

No bed sores the skin is normal weakness

Legs and feet : normal ROM , +1 edema weakness

No bed sores

Genitourinary :have diaper , foley’s cath urine output 400ml urine color is normal

Neurological system : general weakness.

Diagnostic Procedures:

1. Radiology (x-rays, CT scan, MRI, ultrasound…….etc), ECG.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Date/Time | Result | Rational if Abnormal | Treatment |
| CHEST X-Ray | 12/11 | normal | ­normal | normal |
|  |  |  |  |  |

3. Laboratory Data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test | Date | Patient’s Value | Normal Value | Interpretation/Reason for abnormality | Treatment done for abnormal findings |
| HGB | 14/11 | 10.5 | 13.5-17 |  |  |
| RBC | 14/11 | 15.4 |  | NORMAL | NORMAL |
| WBC | 14/11 | 6 | 4.6-11 | NORMAL | NORMAL |

1. Pathophysiology

Summary and related to the patient

*Hyperkalemia is a common complication of AKI when the injury involves the late distal nephron and extends into the collecting duct, causing direct injury of cells responsible for K+ secretion. Such injury can result from acute tubular necrosis due to ischemia or toxins or from inflammation as in acute tubulointerstitial nephritis. Hyperkalemia is an early finding in acute urinary obstruction, because increased tubular pressure disrupts the high resistance nature of the distal nephron, leading to loss of the electrical driving force for K+ secretion. Sudden reductions in the GFR become a limiting factor for K+ secretion in patients with AKI. In patients with oligoanuria, reduced distal delivery of salt and water further contributes to decreased distal K+ secretion.*

*The toxicity of hyperkalemia in patients with AKI develops with modest rises in the plasma K+ concentration, because the increase is rapid. Unlike what occurs in CKD, there is inadequate time to develop adaptive mechanisms at the cellular level to mitigate toxicity. Endogenous release of K+ into the extracellular space due to tissue breakdown as in rhabdomyolysis or in settings of increased catabolism or cell shift due to acidemia further exacerbates hyperkalemia .*

Medications:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Number | Generic Name | Trade Name | Dose | Route | Rationale | Action | Contra- Indications | Side Effects | Nursing Consideration |
| 1. | Enoxaparin sodium | clexan | 80 | s.c | Anticogulant  | stops blood from clotting by deactivating one of the proteins in blood that body uses to form a clot. | bleeding | Pain itching  | Asses for signs of bleeding  |
| 2. | pantoprazol | pantover | 40mg | iv | ppi | It works to shut off the acid-pumping cells in your stomach. | allergic to pantoprazole | nausea, vomiting, headache, dizziness | Monitor patient response to the drug Monitor for adverse effects |
| 3. | Cortisol | hydrocort | 50mg | iv | treat symptoms of low corticosteroid levels  | prevents the release of substances in the body that cause inflammation | severe respiratory depression, acute or significant bronchial asthma | constipation, nausea, vomiting | Assess each patient's risk for opioid addiction, abuse, or misuse |
| 4. | Polystyrene sulfonate | k-exalate | 30g | po | treat a high level of potassium in your blood | increases fecal potassium excretion through binding of potassium in the lumen of the gastrointestinal tract. | patients with hypokalemia, patients with a history of hypersensitivity to polystyrene sulfonate | upset stomach,* nausea,
* vomiting,
 | Monitor serum potassium during therapy |

Nursing care Plan

|  |  |  |  |
| --- | --- | --- | --- |
| Nursing Dx.  | Nursing Action | rationale  | EVALUATION |
| excess fluid volume r/t (renal failure)   | Monitor urine specific gravity. | Measures the kidney’s ability to concentrate urine..  | Display appropriate urinary output with specific gravity |
| Risk for decreased cardiac outputr/tFluid overload | Monitor BP and HR. | Fluid volume excess, combined with hypertension  | Maintain cardiac output as evidenced by BP and HR |
| Risk for infection r/t urinary catheterization | Avoid invasive procedures | Limits introduction of bacteria into body | Experience no signs/symptoms of infection. |
| Risk for deficient fluid volume r/t Excessive loss of fluid  | Provide allowed fluids throughout 24-hr period. | Diuretic phase of ARF may revert to oliguric phase if fluid intake is not maintained or nocturnal dehydration occurs. | stable weight and vital signs, electrolytes within normal range. |

Reflection

I choose this case because to learn more about AKI & Hyperkalemia and I found it interested .

And now I can care patient with similar case.

REFERENCES

<https://cjasn.asnjournals.org/content/13/1/155>

<https://nurseslabs.com/6-acute-renal-failure-nursing-care-plans/>