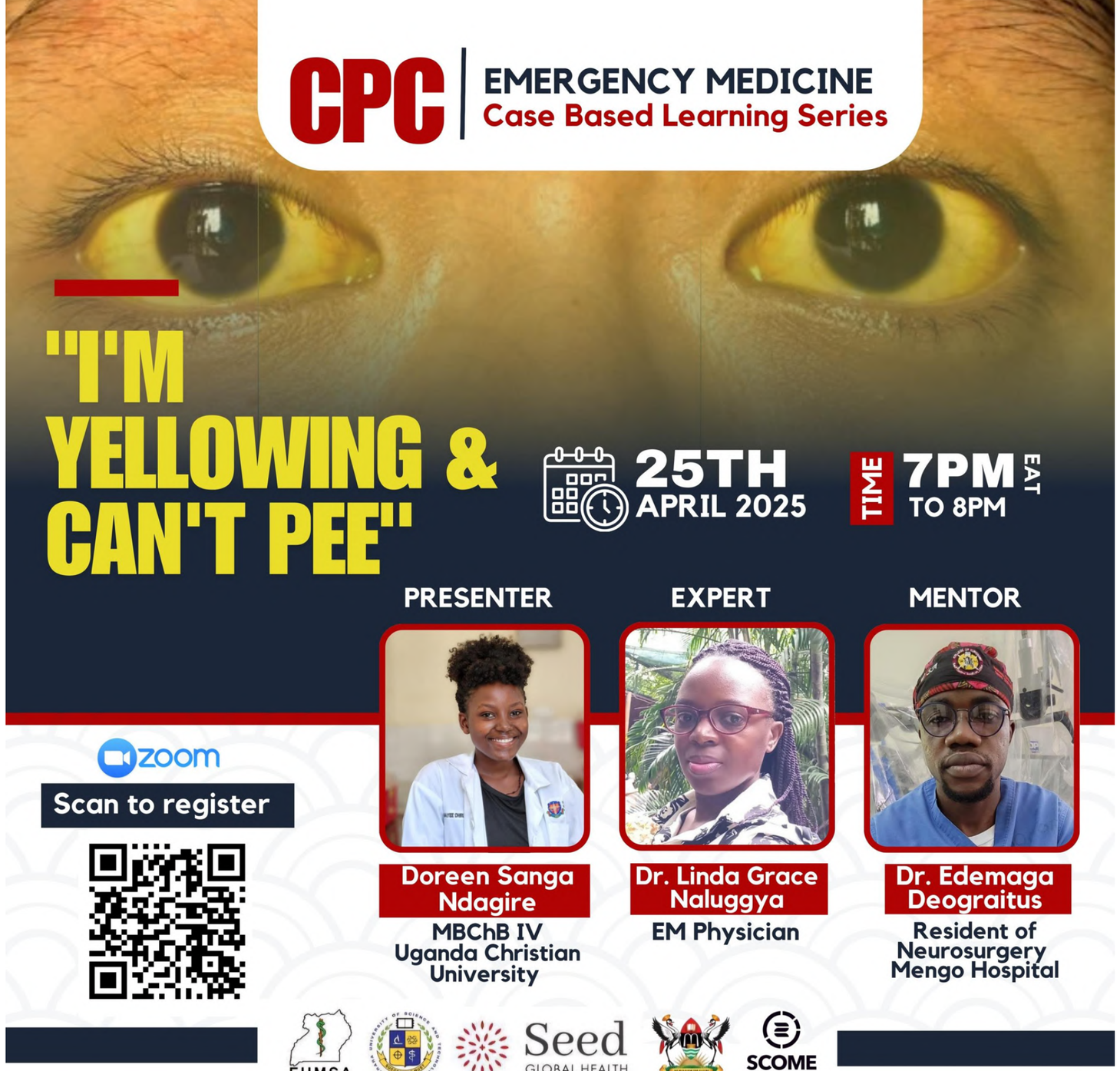
Case Based Learning Series

"Student Led Adult Learning"



Presenting Complaint

- 33 year old Male with Anuria for 2 days
- Also had; Yellowing eyes - 2 weeks
- Hematemesis, epistaxis, melena stools – 2 days
- Confusion and headache

Primary Survey

Airway: Patent

Breathing: Spontaneous, RR 17, un-labored

Circulation: moderate pallor, BP 139/67mmHg. PR 68bpm. Warm extremities, **thready pulse**

Disability: Alert , PEARL

Exposure : Febrile (38.5°C), Deep jaundice

SAMPLE History

Signs & Symptoms: 2 days Anuria, epistaxis, hematemesis, melena stools, confusion and headache

Allergies: No known allergies

Medications: Unknown PUD Rx

Past Medical History (PMH): no known chronic illness, HIV negative

Last Meal: >5 hours back

Events preceding Presentation: “PUD” treatment, Alcohol use

Audience

Any additional information?

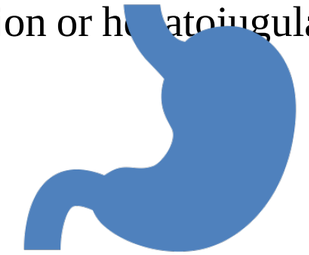
Expert opinion?

Any additional thoughts at this point?

Any additional info you would want to get?

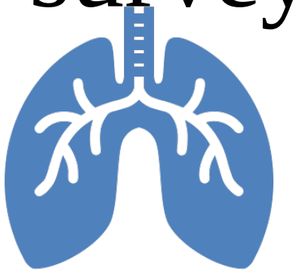
Secondary survey

Head and Neck: Soft, no jugular distension or hepatojugular reflex



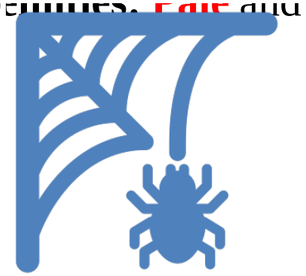
Abdomen: soft, non-distended, epigastric [illegible] tenderness

Neurological: **GCS is 13/15,** no FNDs



Chest: No bruising or ecchymosis, clear on auscultation

Extremities: **Pale** and warm



Skin: No rash, striae or spider nevi , normal hair distribution. Deep jaundice

ED COURSE

CBC	
WBC(4.00-10.00)	8.5
NEU#(1.50-7.00)	**7.53**
NEU%(40.0-75.0)	**88.6**
LYM#(1.00-3.70)	0.29
LYM%(21.0-40.0)	3.5
HB(12.0-18.0) g/dl	14.4
PLT(150-400)	41
LFTs	
T.BILIRUBIN(2.0-17)IU/L	**202**
D.BILIRUBIN	**200**
ALP(74-280)IU/L	**330**
ALT(0-40)IU/L	**2279**
AST(0-37)IU/L	**2522**
GGT(11.0-50)IU/L	**469**
ALBUMIN(35-53)gm/L	**31**
T.PROTEIN(60-83)gm/L	**50**

RFTs	
Na+ (137-145)mmol/L	**130**
K+(3.3-4.8)mmol/L	6.8
Cl-(96-109)mmol/L	**74**
Urea(3.0-6.0)mmol/L	**43.6**
Cr-(50-125)umol/L	**1416**
HCO3-(18-30)mmol/L	**16**

PT (11-13.5)	**18.8**
INR (0.8-1.2)	**1.54**
HBsAg, HCV, HAV, Malaria, HIV	Neg
RVF PCR	Pending

ED Intervention

Airway: None

Breathing: None

Circulation:

- 2 large (14 gauge) **IV lines** + blood **samples** (CBC, R/LFTs, coagulation profile)
- IV **fluids**
- Tranexamic Acid (**TXA**)
- NG tube insertion
- Oxygen therapy
- Antiemetics

Other: Antibiotics (IV bacqure* 500mg, IV metronidazole 500mg)

**Bacqure = imipenem + cilastin*

Expert opinion?

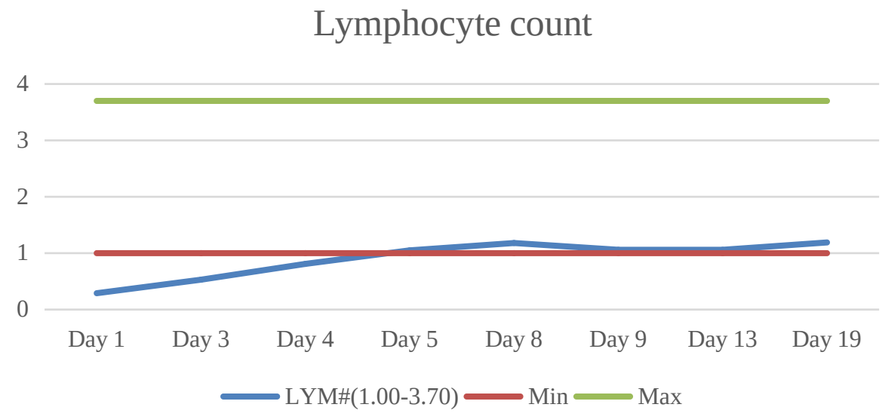
Any additional thoughts?

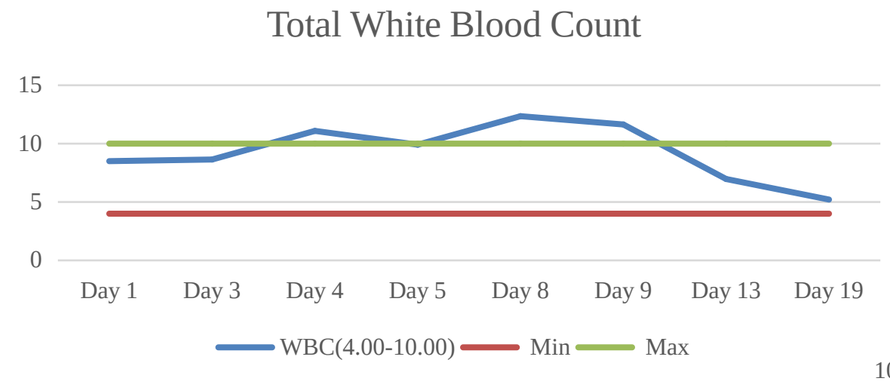
What would be the typical consults, interventions and likely disposition options?

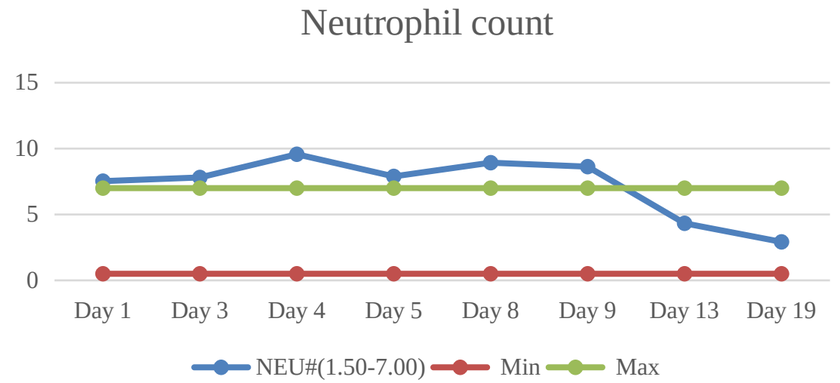
Hospital course

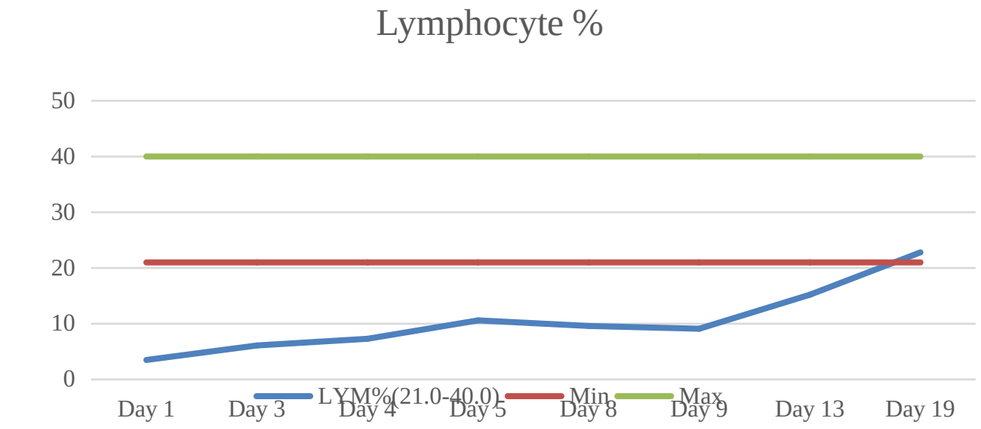
- Admitted on medical ward
- Labs, imaging, endoscopy
- Conservative management

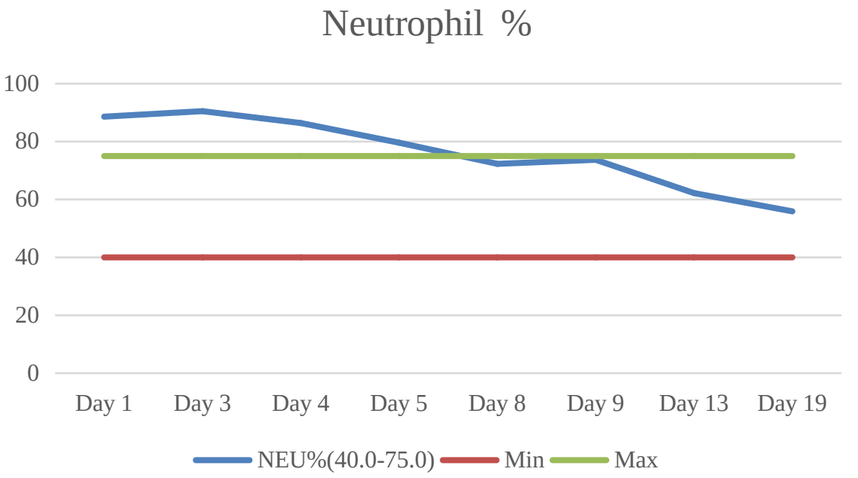
CBC


Lymphocyte count
4
3
2
1
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
LYM#(1.00-3.70)
Min
Max

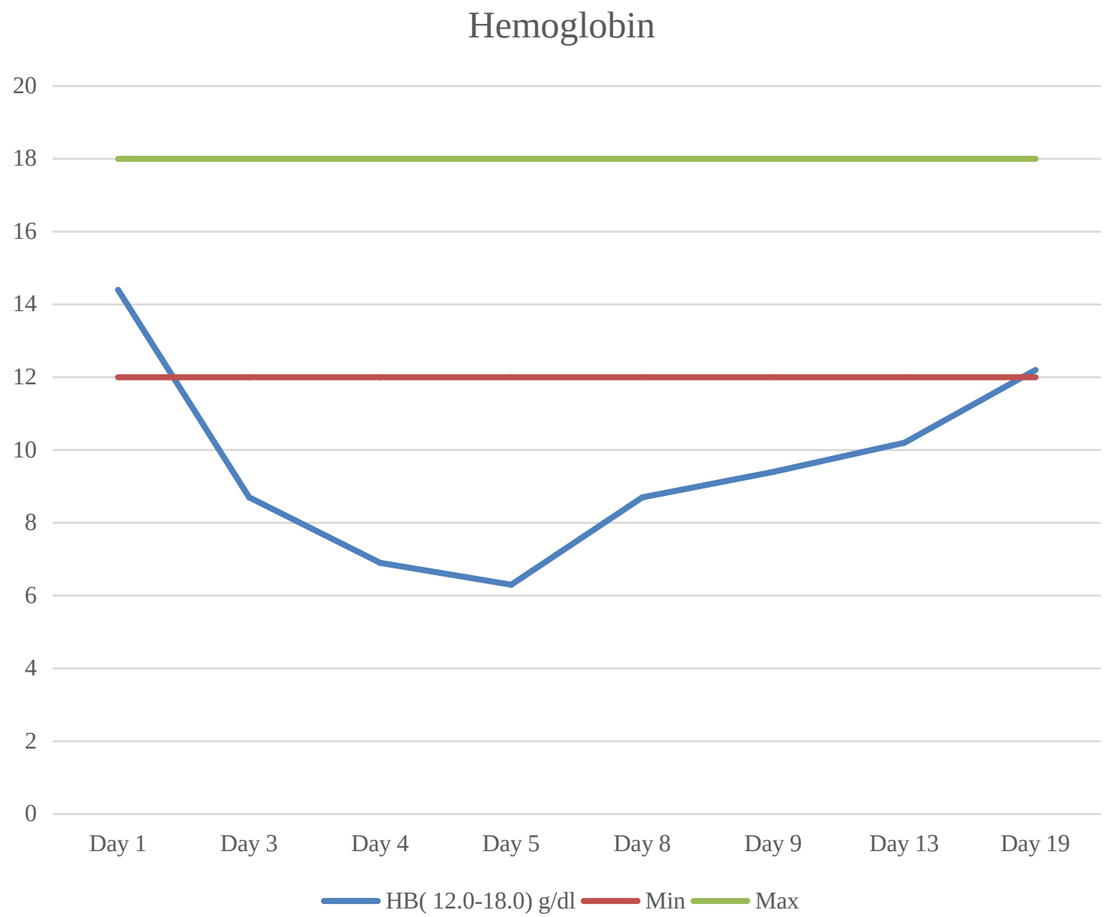

Total White Blood Count
15
10
5
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
WBC(4.00-10.00)
Min
Max

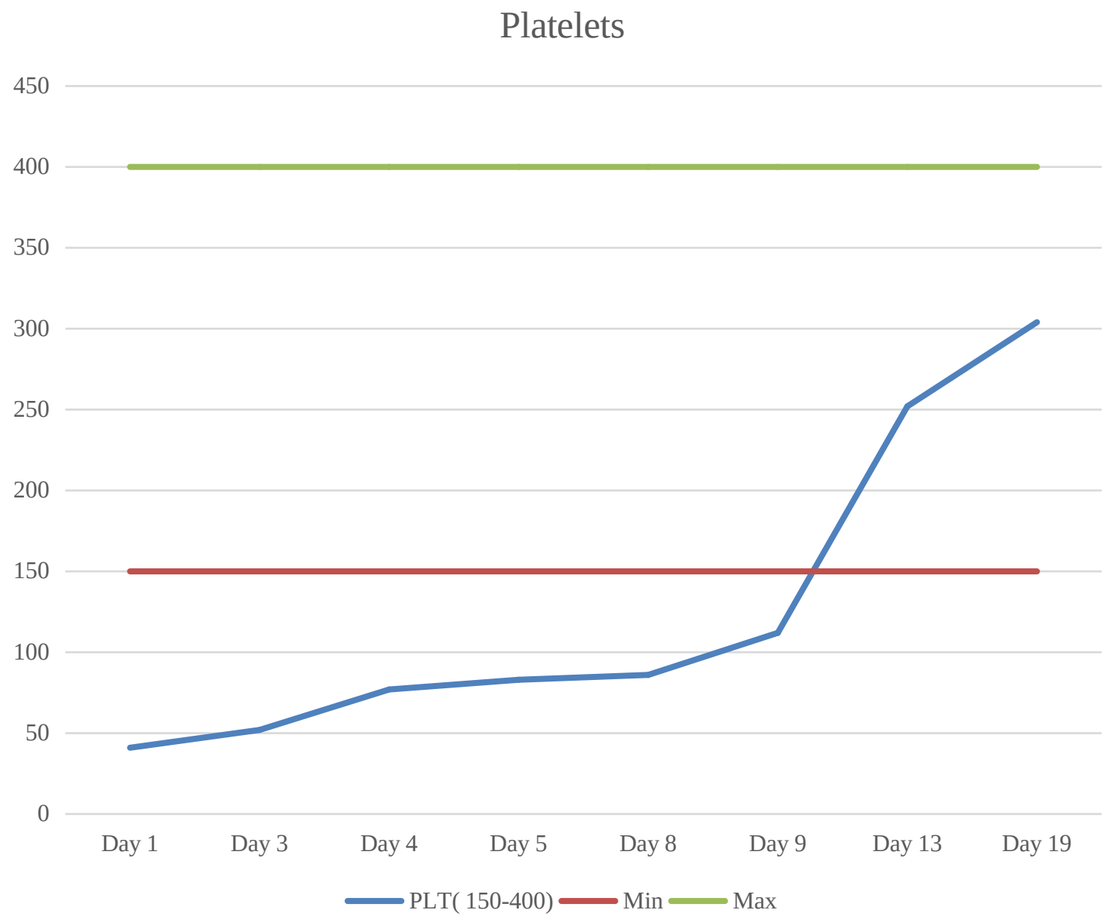

Neutrophil count
15
10
5
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
NEU#(1.50-7.00)
Min
Max


Lymphocyte %
50
40
30
20
10
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
LYM%(21.0-40.0)
Min
Max

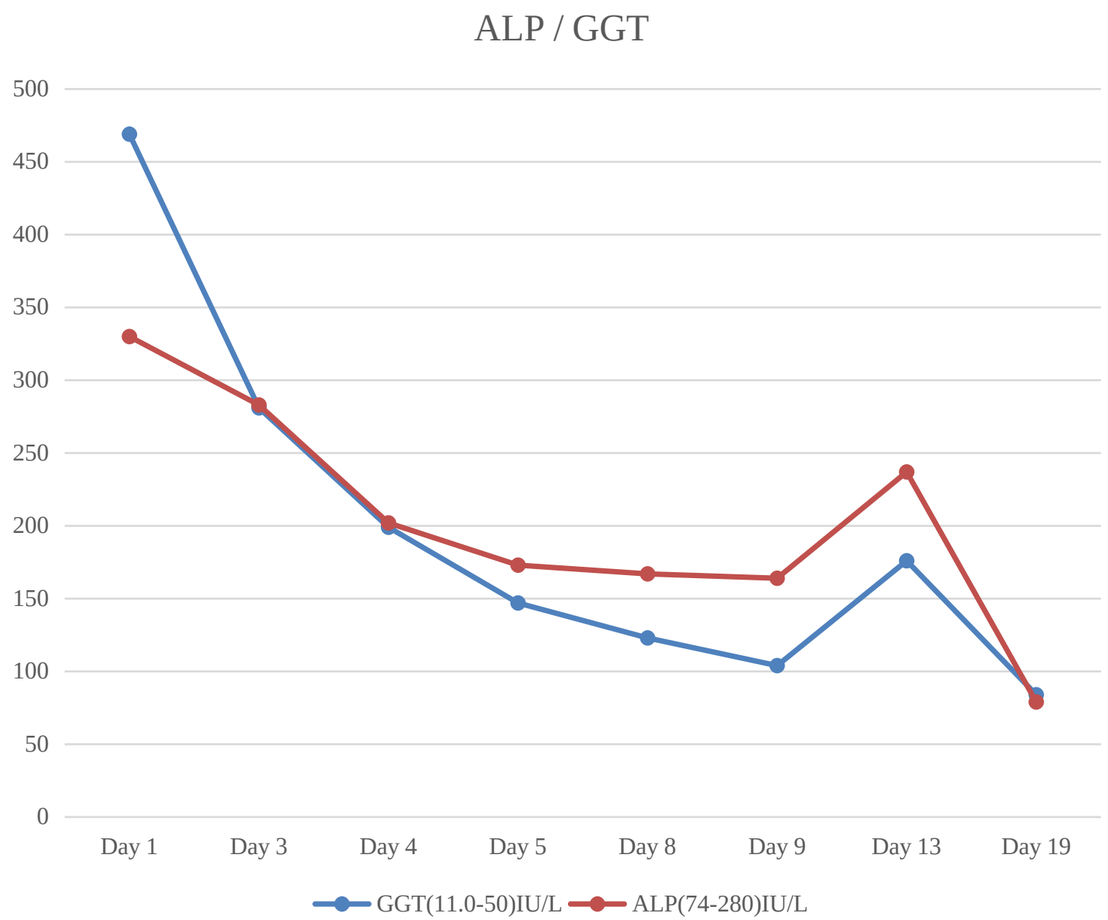

Neutrophil %
100
80
60
40
20
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
NEU%(40.0-75.0)
Min
Max

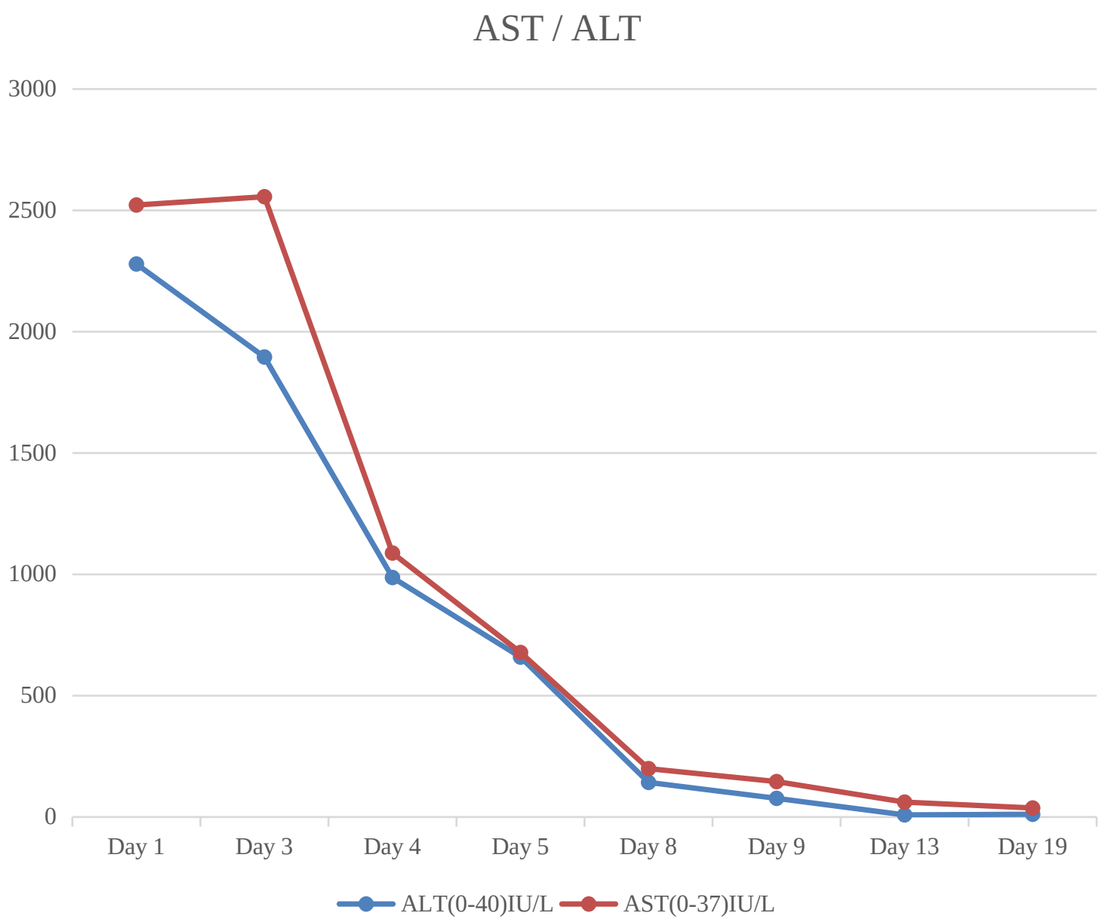
CBC Cont’d


Hemoglobin
20
18
16
14
12
10
8
6
4
2
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
HB(12.0-18.0) g/dl
Min
Max

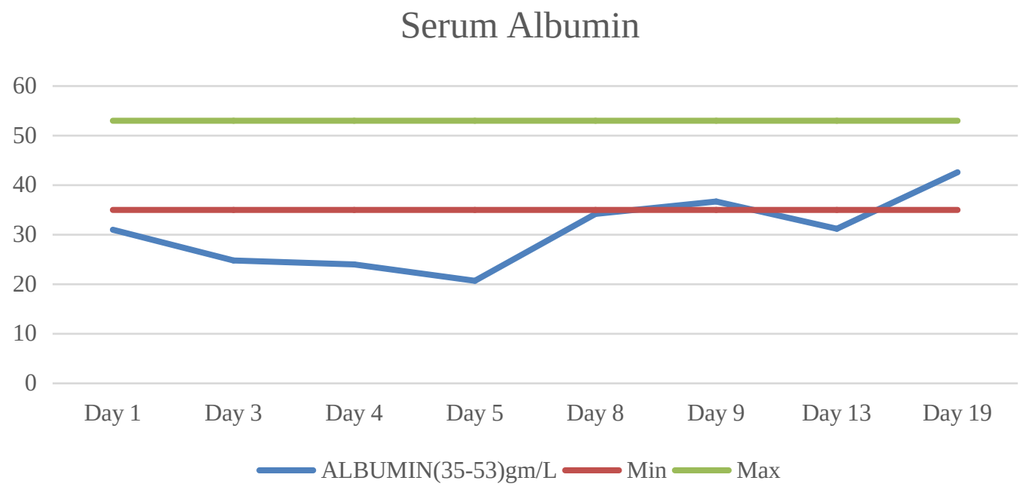

Platelets
450
400
350
300
250
200
150
100
50
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
PLT(150-400)
Min
Max

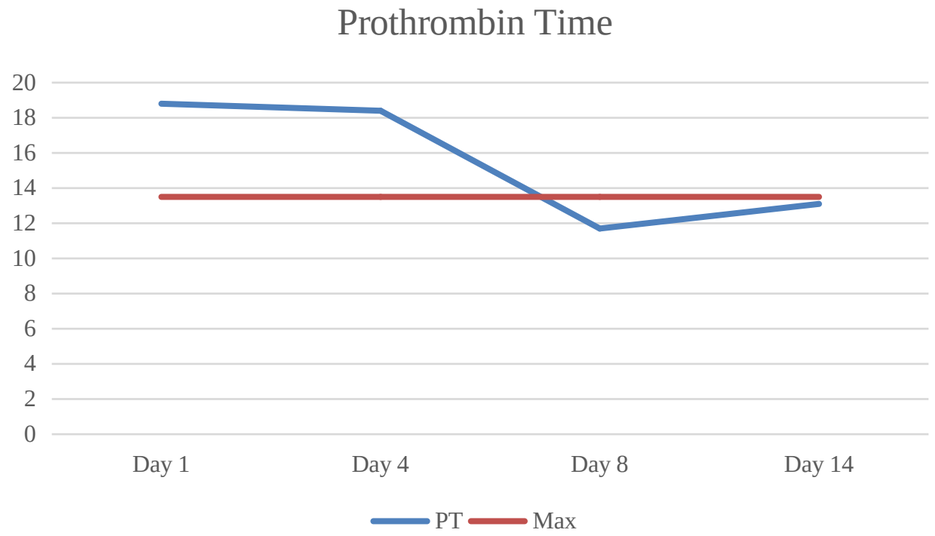
LIVER ENZYMES

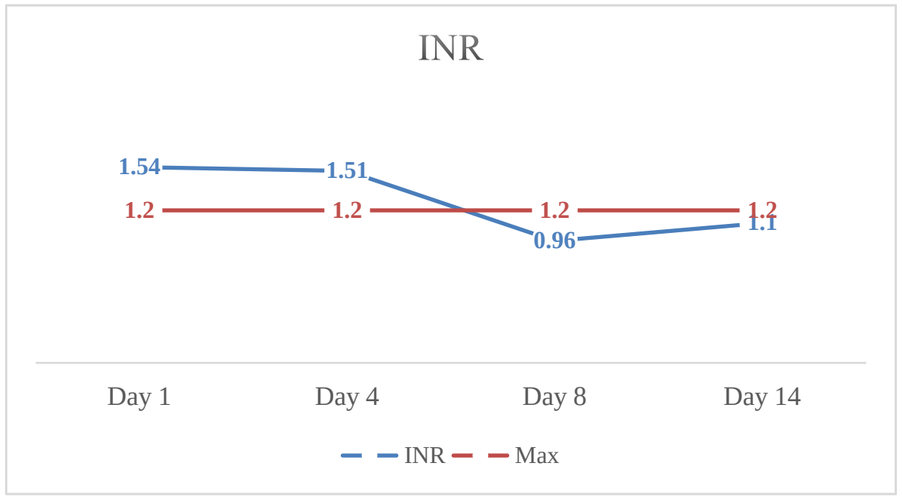




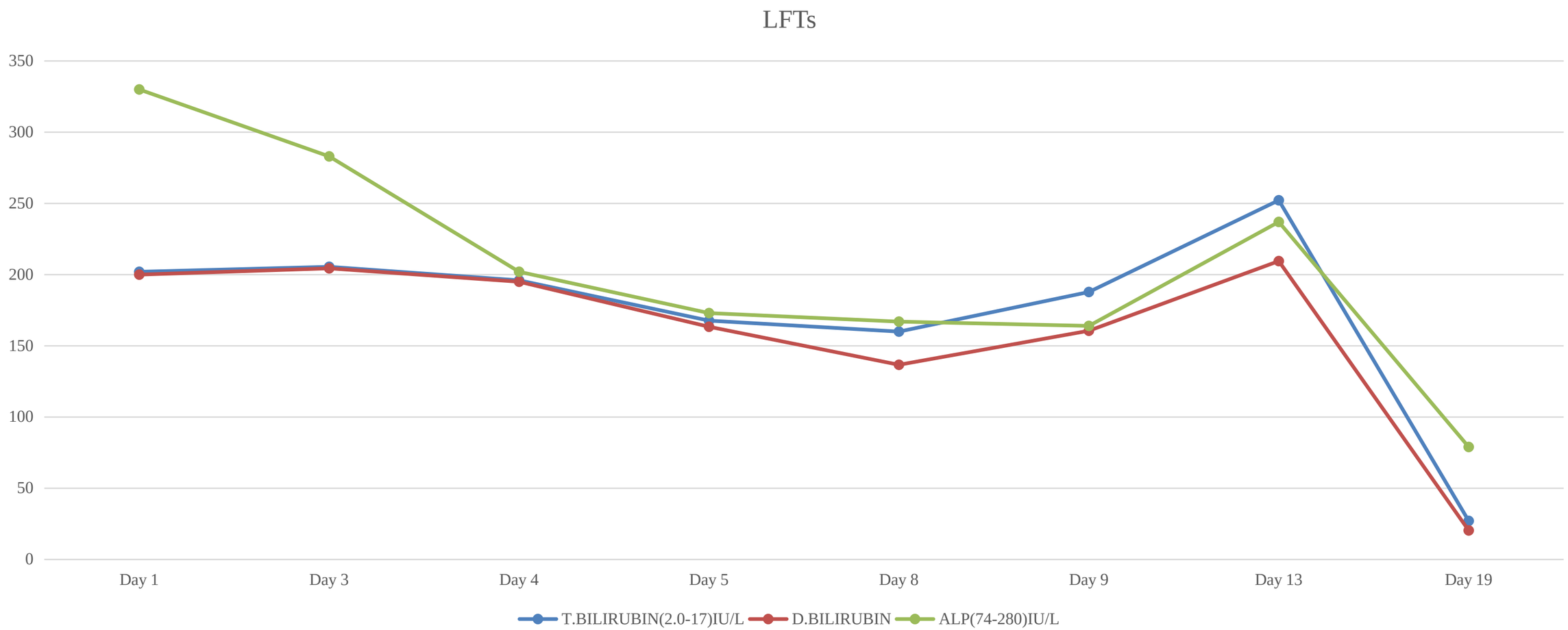
LFTs


Serum Albumin
60
50
40
30
20
10
0
Day 1
Day 3
Day 4
Day 5
Day 8
Day 9
Day 13
Day 19
ALBUMIN(35-53)gm/L
Min
Max

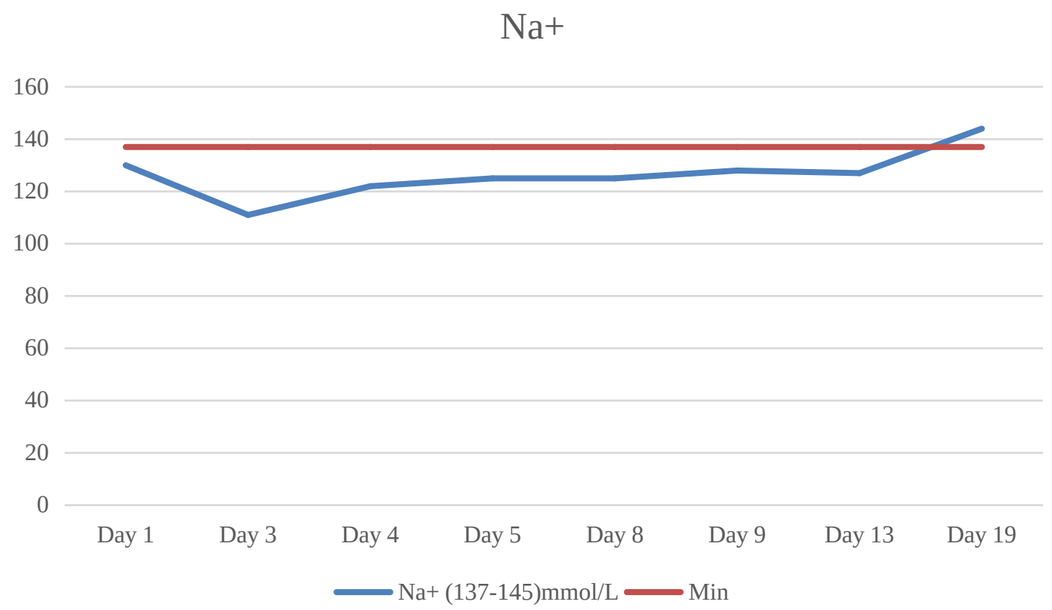

Prothrombin Time
20
18
16
14
12
10
8
6
4
2
0
Day 1
Day 4
Day 8
Day 14
PT
Max

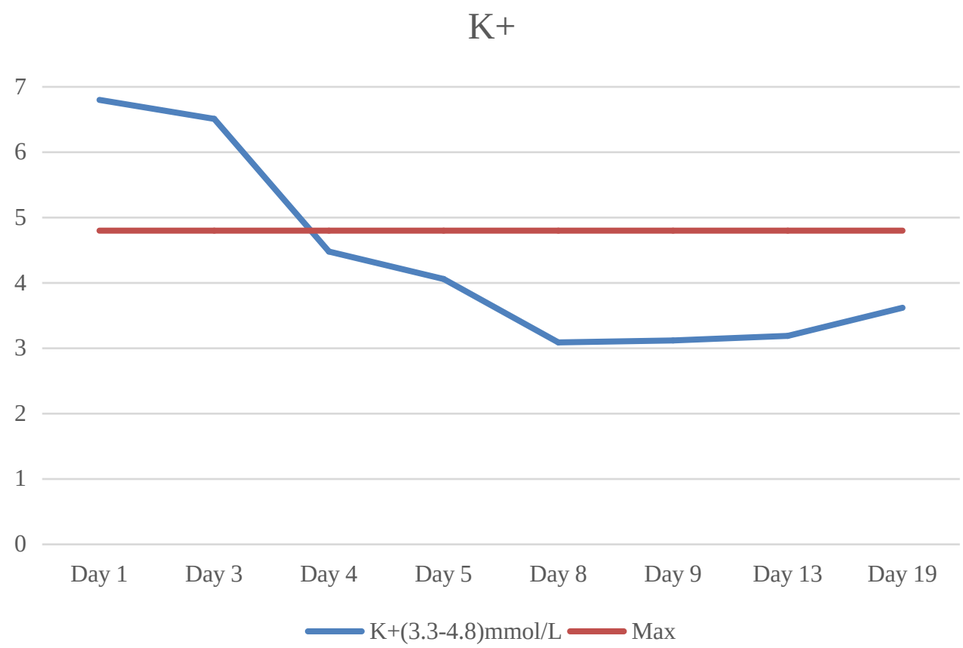

INR
1.54
1.51
1.2
1.2
1.2
1.2
0.96
1.1
Day 1
Day 4
Day 8
Day 14
INR
Max

Liver Function Tests

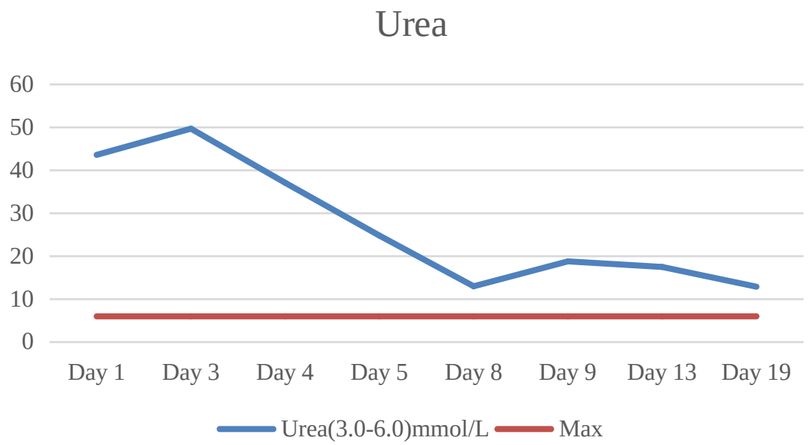


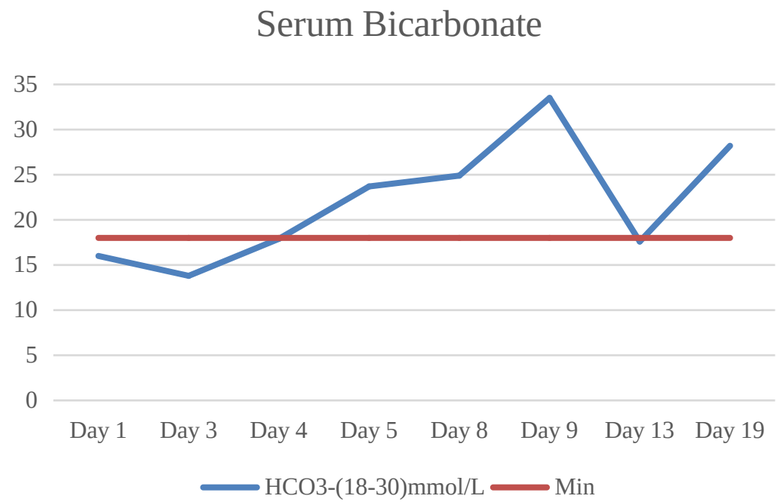
Electrolytes

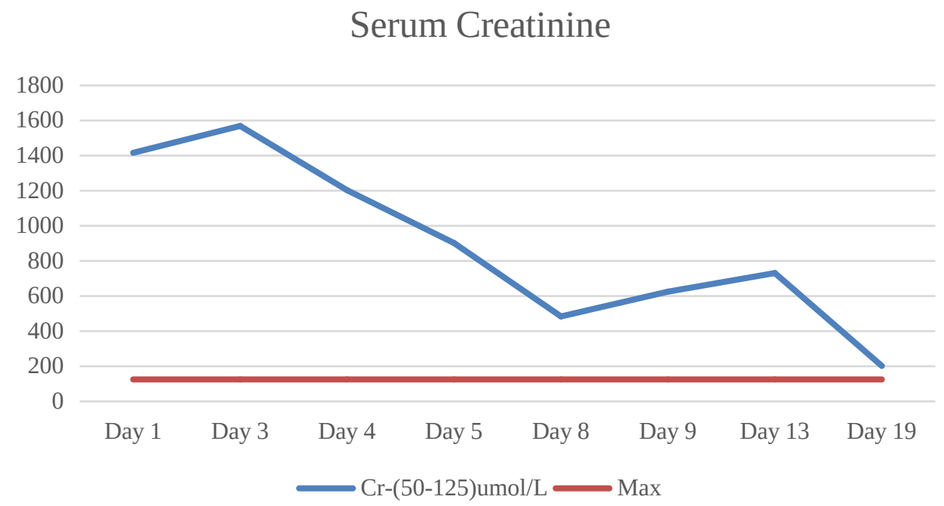




Renal Function Tests







Hospital Interventions

Antibiotics: Imipinem/Cilastin/Metronidazole
Liver failure Rx: Rifaximin & Lactulose, Hepamerz (L ornithine/ L Aspartate), Vitamin K
I.V Fluids, Albumin , Blood, Platelets, Fresh frozen plasma
Hyperkalemia Rx before dialysis: Calcium & Bicarbonate (IV) , Salbutamol (nebulized)

Hospital Interventions

IV Ullinastatin (Serine protease inhibitor)

Antiemetics, antipyretics, Esomeprazole, Tranexamic acid

Hepatoprotective supplements: Livolin forte, Sylibin

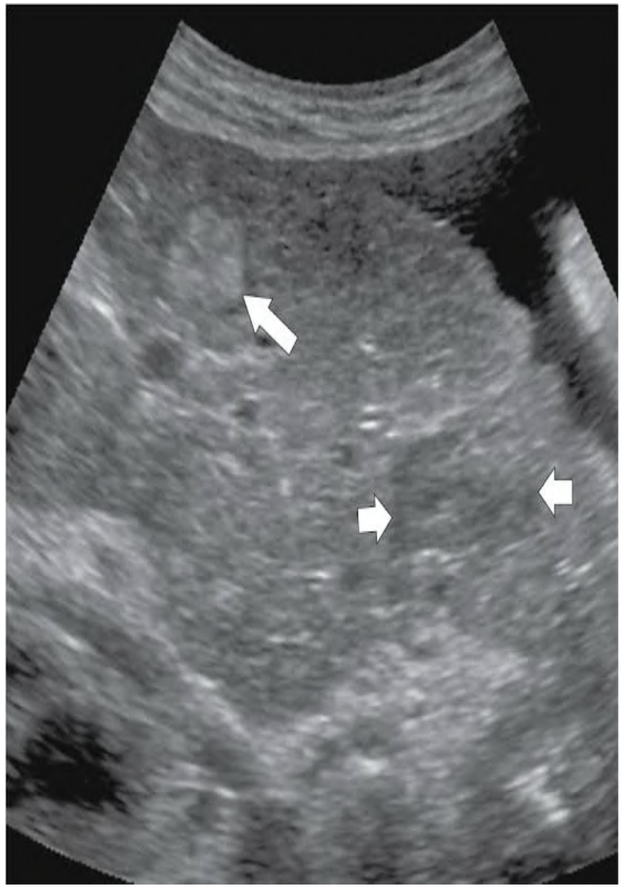
Anti hypertensives and Furosemide (elevated BPs in patient)

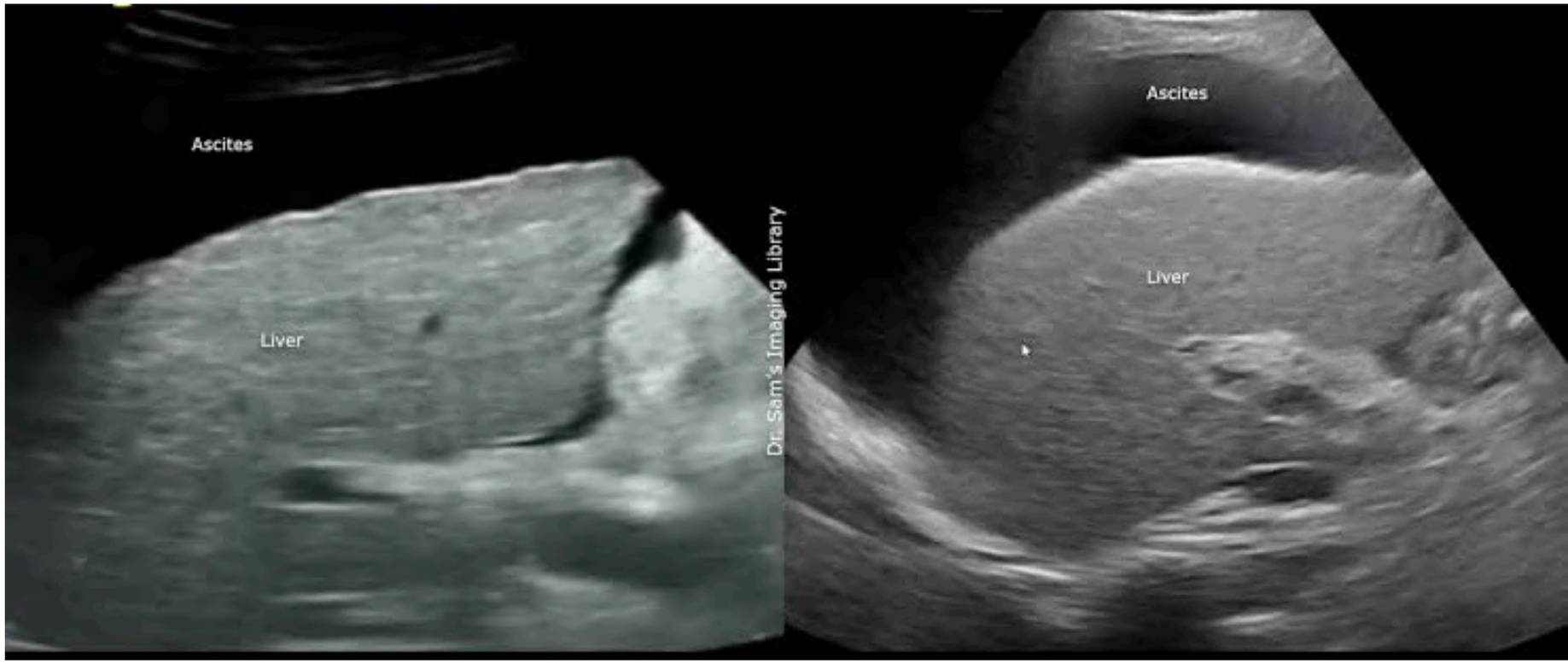
Hemodialysis 3 days then three times a week * 2 weeks.

Virology / Microbiology

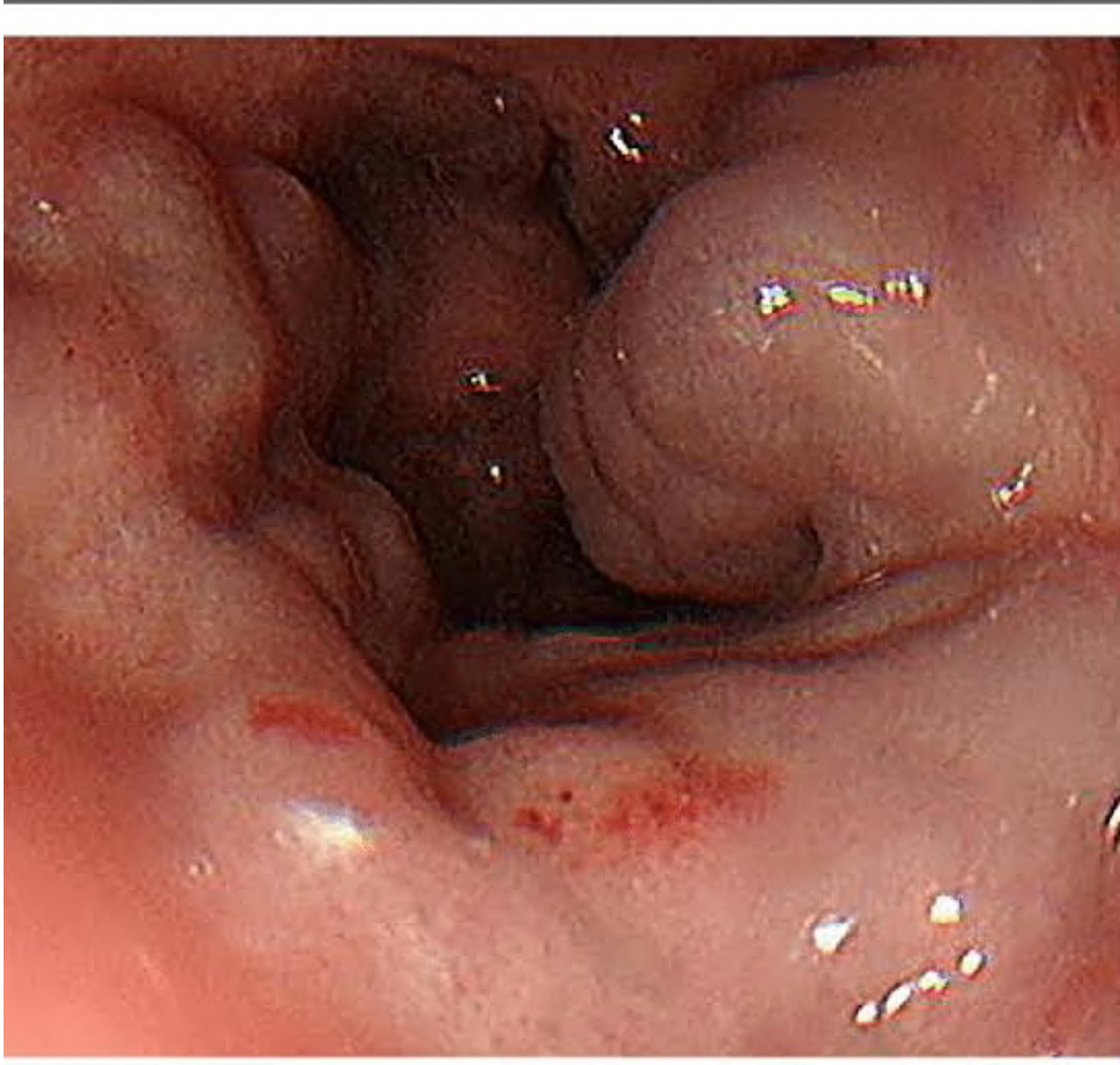
- RVF PCR Positive (Day 2)
- Blood Culture no growth (Day 5)

USS of the cirrhotic liver with portal hypertension.





Endoscopy: Esophageal varices



Audience

What key issues and differentials stand out for you in this patient

Key issues in this patient

Hepatitis : Elevated liver enzymes, fever, RVF

Liver failure: Coagulopathy (bleeding and elevated PT), low albumin

Subclinical chronic cirrhosis: USS, EGD

Acute Renal failure: Anuria, Hyperkalemia, uremia, newly elevated creatinine

Hyperbilirubinemia: Jaundice

Upper GI bleeding

Differential diagnoses

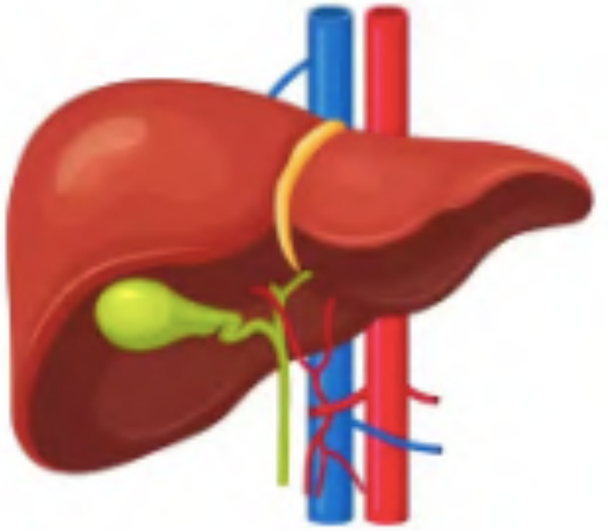
- Upper GI bleeding
- Infectious: Viral hemorrhagic fever, Hepatitis
- Poisoning: Warfarin (rat poison)
- Auto immune hepatitis
- Hepatic encephalopathy
- Spontaneous Bacterial Peritonitis
- Alcoholic liver disease
- Hepatocellular carcinoma
- Gromerulonephritis

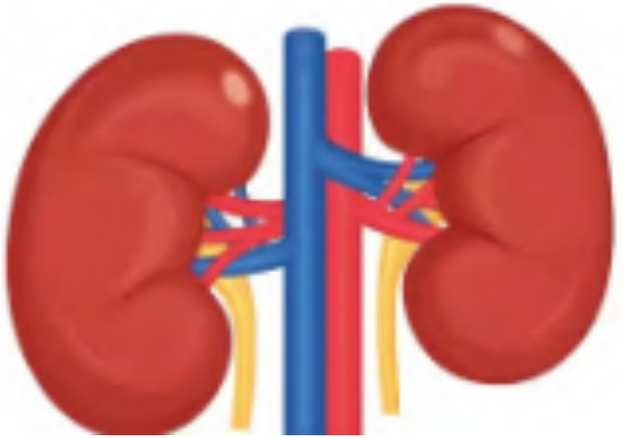
Expert

Pearls and Pitfalls

What is Hepatorenal Syndrome?

Hepatorenal Syndrome (HRS) is a rare syndrome characterized by renal failure in individuals with liver cirrhosis.





Etiology

Kidney failure due to circulatory changes secondary to liver disease

No direct kidney etiology

Type 1: acute decline

Type 2: Gradual decline in chronic kidney disease

Liver failure triggers cytokine release and vasodilation

Management

Conservative

- Avoid nephrotoxic agents
- Ensure sufficient volume if volume depleted (IV fluids, albumin)
- Correct any obvious triggers eg fever, sepsis, upper GI bleeding
- Dialysis
- Surgical : Trans jugular intrahepatic portosystemic shunt (TIPS)

Manage the cause

- Liver transplant
- Optimize liver function (Diet, rifaximin, lactulose…)

References

- Ranasinghe IR, Sharma B, Bashir K. Hepatorenal Syndrome. [Updated 2023 Aug 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK430856/
- UpToDate, Accessed April 17th 2025

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CPC Secretariat: Dr. Atyera, Dr. Olinga, Dr. Twinamatsiko, Dr. Ahaisibwe, Mr. Okumu

CPC WALL OF FAME

TOPIC	PRESENTER	EXPERT	MODERATOR	MENTOR	DIAGNOSIS
Altered Mental Status	Dr. Jimmy Atyera	Dr. Kenneth Bagonza	Dr. Daniel Olinga		Atrial Fibrillation
I Can’t Breathe	Regan Kakande MBChB V	Dr. Doreen Okong	Dr. Anna Kaguna	Dr. Daniel Olinga	Tension Pneumothorax
My Neck is Stuck	Dr. Emmanuel Mbaruk	Dr. Joseph Kalanzi	Dr. Anna Kaguna	Dr. Tracy Walczynski	Tetanus
It keeps dripping	Hennrietta Lunkuse MBChB V	Dr. Ambrose Okello	Dr. Anna Kaguna	Dr. Robert Wangoda	Rectal Polyp
I’m yellowing and can’t pee	Doreen Babirye Sanga MBChB IV	Dr. Linda Nalugya	Dr. Anna Kaguna	Dr. Deo Edemaga	Hepatorenal syndrome

CPC Secretariat:

Emmanuel Okumu , Andrew Twineamatsiko, Bonaventure Ahaisibwe , Jimmy Atyera, Daniel Olinga, Anna Kaguna