

# Case Presentation

Presented by

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- 15 months old female patient, first sibling of non-consanguineous marriage.

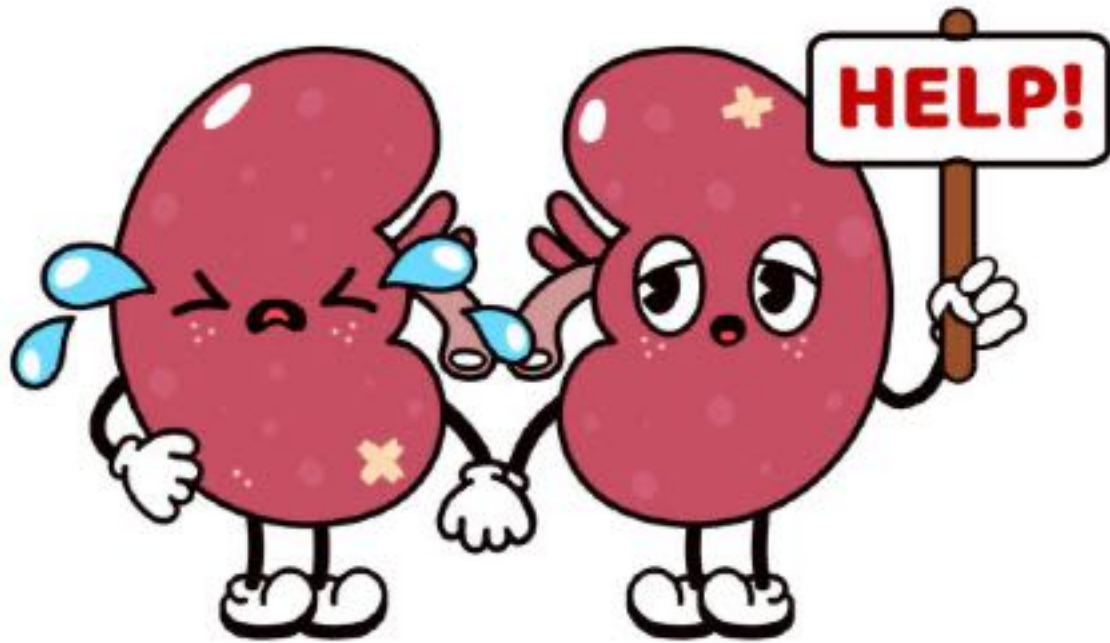
- Her condition started with watery diarrhea (6 times/day) and vomiting in first day, the diarrhea not associated with mucus or blood.



- Mother sought medical advice , Metronidazole and Antiemetics were prescribed but with No improvement.
- In the 2<sup>nd</sup> day the diarrhea became associated with blood.
- patient admitted cause of dehydration .
- At that time, all **labs were normal regarding**
- Acase of GE
- Hb 12.5 , Plts 419 , TLC 19.5  
Cr 0.5 , Urea 37



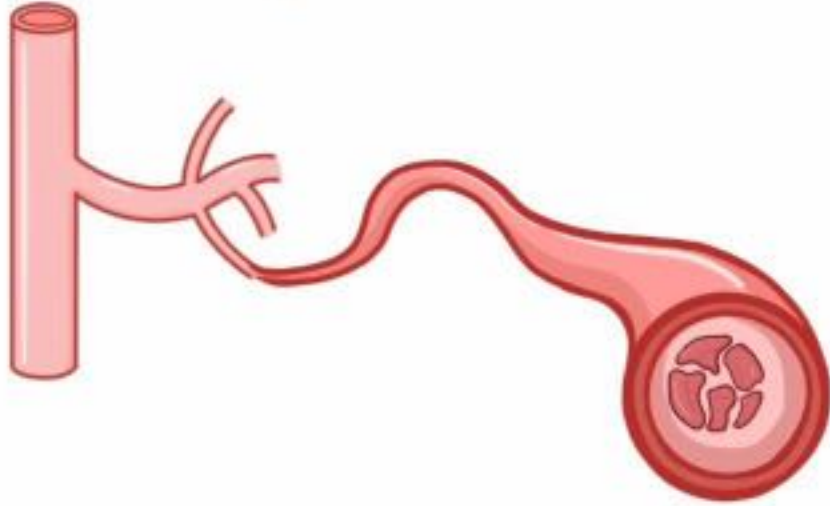
- Patient received antibiotics , PPI and antiemetics
- During this period mother noticed that her girl had no urine for about 2 days
- Where her investigation showed :
  - Hb 9 , PLts 76
  - Cr 2.9 , Urea 128
  - PAUS .. Normal kidneys site , size , shape and differentiation



- So, we are talking about a case of AKI

# HEMOLYTIC UREMIC SYNDROME (HUS)

\* MICROANGIOPATHIC HEMOLYTIC ANEMIA



\* THROMBOCYTOPENIA

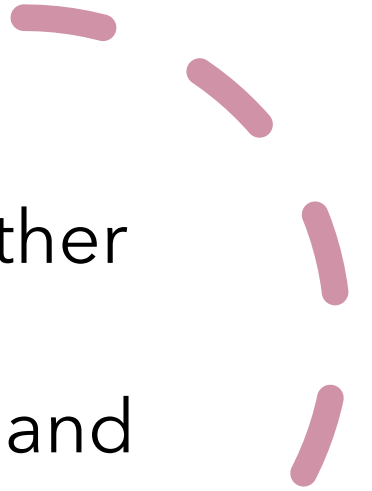


\* ACUTE KIDNEY INJURY





- Patient transferred to an other hospital
- Admitted to PICU , Anuric and Anemic
- Haptoglobin consumed
- -ve culture for shigella
- -ve coombs test
- C3 77 , c4 normal range





What is the **treatment**  
regimen ???



## 1.Supportive Care:

1. Fluid Management
2. Electrolyte Balance
3. Blood Transfusions
4. Platelet Transfusion

## 2.Dialysis:

1. **Renal Replacement Therapy (Dialysis):** In cases where kidney function is significantly impaired, dialysis may be required to remove waste products and excess fluids from the blood.

## 3.Avoiding Certain Medications:

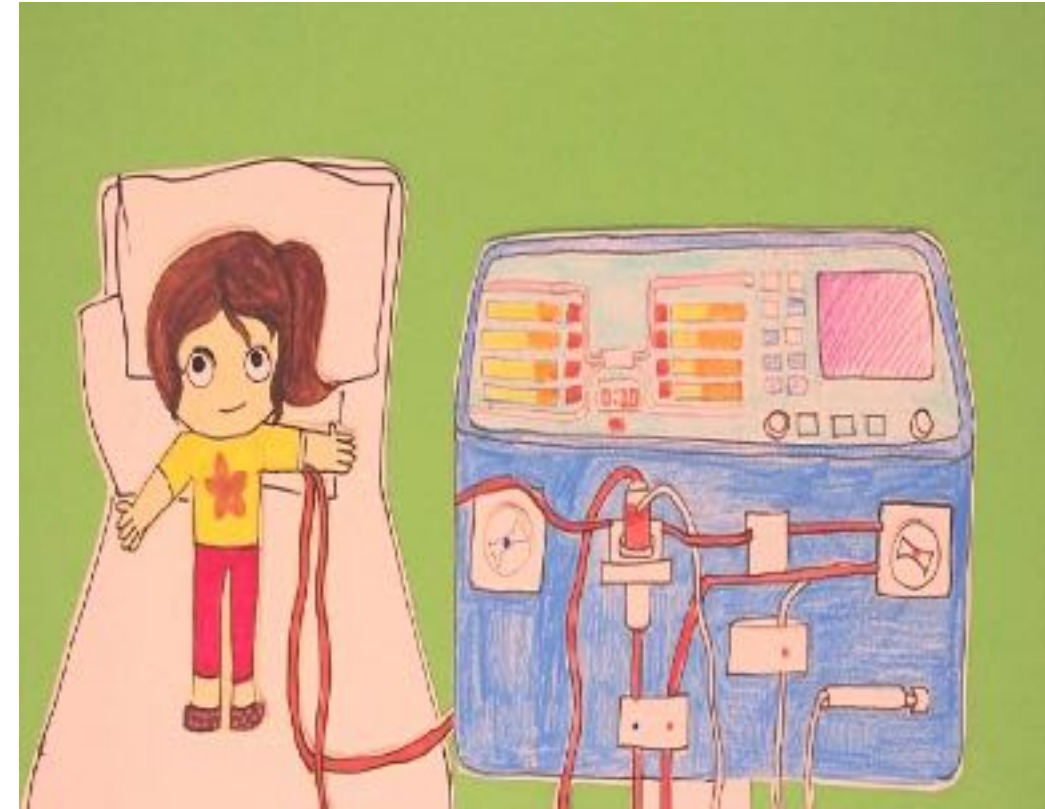
1. Avoiding Antibiotics and Antidiarrheal Medications.

## 4.Management of Complications:

1. **Hypertension Control:** Blood pressure management is important to prevent further kidney damage.

## 5.Avoiding Nephrotoxic Substances:

1. **Avoiding Nephrotoxic Drugs:** Certain medications and substances that can be harmful to the kidneys should be avoided.





- Labs done during admission





- Patient urine output become within normal



Patient  
developed  
tachycardia and  
tachypnea .



- Elevated cardiac enzymes
- ECHO done show impaired cardiac function with dilated coronaries





What is the *next* step ???

- COVID 19 ANTISPIKES +VE
- Patient received IVIG





## Case summary:

**15 months female with post-covid 19 AKI (HUS) with cardiac affection.**

**Renal replacement therapy done and received IVIG.**

**Patient now fully cured with no need for close follow up.**





Is there **association** between COVID 19 ,  
HUS and CARDIAC DYSFUNCTION ???

- **AKI (Acute Kidney Injury):**
- **Direct Viral Injury:** The SARS-CoV-2 virus primarily targets the respiratory system, but it has been found in other organs, including the kidneys. Some studies suggest that the virus may directly infect renal cells, leading to AKI.
- **Inflammatory Response:** COVID-19 can trigger a robust inflammatory response in the body, known as a cytokine storm. This inflammatory state may contribute to kidney damage by affecting blood flow and causing systemic inflammation.
- **Hemodynamic Changes:** COVID-19 can impact the hemodynamics of the body, affecting blood pressure and renal perfusion. This, in turn, may contribute to the development of AKI.

- **Cardiac Dysfunction:**
- **Direct Viral Involvement:** The virus has been found in the heart tissue of some patients, suggesting the possibility of direct viral involvement in cardiac dysfunction. This may lead to myocarditis (inflammation of the heart muscle) and other cardiac complications.
- **Inflammatory Response:** Similar to AKI, the inflammatory response triggered by COVID-19 can affect the cardiovascular system. Inflammation of the blood vessels and the heart muscle can contribute to cardiac dysfunction.
- **Hypercoagulability:** COVID-19 is associated with a hypercoagulable state, leading to an increased risk of blood clot formation. Blood clots in the coronary arteries can result in myocardial infarction (heart attack) and contribute to cardiac dysfunction.



- Acute Kidney Injury (AKI) and cardiac dysfunction have been observed in some patients with COVID-19.
- Both AKI and cardiac dysfunction in COVID-19 may share common underlying mechanisms, including inflammation, hypercoagulability, and endothelial dysfunction.



Thank You!

