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Case Study

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CASE STUDY ON ACUTE KIDNEY INJURY IN A YOUNG ADULT MALE

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Abstract

Acute kidney injury (AKI) is a common and serious clinical condition characterized by a sudden decline in renal function, often associated with significant morbidity. Early diagnosis and prompt management are essential to prevent progression to chronic kidney disease. This case study describes a 31-year-old male admitted with abdominal pain, fever, anuria, and gastrointestinal symptoms. Laboratory investigations revealed markedly elevated blood urea and serum creatinine levels, confirming the diagnosis of acute kidney injury. Imaging studies showed bilateral grade-1 renal parenchymal disease with minimal ascitic fluid. The patient was managed conservatively with intravenous antibiotics, supportive therapy, electrolyte management, and symptomatic treatment. Gradual clinical improvement was observed, and the patient was discharged with oral medications and advised follow-up. This case highlights the importance of early recognition of AKI, appropriate antimicrobial therapy, and supportive care in achieving favorable outcomes.

Keywords: Acute kidney injury, Anuria, Renal failure, Case study, Nephrology.

INTRODUCTION

Acute kidney injury (AKI) is defined as a sudden decrease in kidney function, resulting in the accumulation of nitrogenous waste products and disturbances in fluid, electrolyte, and acid–base balance [1]. AKI may develop due to prerenal, intrinsic renal, or postrenal causes and is frequently associated with infections, dehydration, and drug toxicity [2]. Despite advances in medical care, AKI remains a major clinical challenge due to its association with increased hospital stay, morbidity, and mortality [3]. This manuscript presents a case of AKI in a young adult male, emphasizing clinical presentation, laboratory findings, treatment, and outcome.

CASE STUDY

A 31-year-old male patient (ABC) was admitted to the Nephrology Department on 03/02/2025 with complaints of abdominal pain, anuria, fever for four days, loose stools (4–5 episodes per day), and chills with rigors, with no known past medical history. On clinical examination, his blood pressure ranged from 100/60 to 110/70 mmHg throughout hospitalization, pulse rate remained stable between 70–80 beats per minute, oxygen saturation was 98%, and cardiovascular and respiratory system examinations were within normal limits. Laboratory investigations revealed

significantly elevated blood urea (120 mg/dL) and serum creatinine (4.5 mg/dL), indicating severe renal impairment, while serum electrolytes were largely within normal limits except for mildly increased chloride levels. Complete blood picture showed mild anemia with hemoglobin of 11.8 g/dL and leukocytosis (11,900 cells/cumm), suggestive of an underlying infection. Ultrasonography of the abdomen demonstrated bilateral grade-1 renal parenchymal disease with minimal ascitic fluid, supporting the diagnosis of acute kidney injury. Based on clinical presentation and investigational findings, the patient was diagnosed with acute kidney injury (AKI) and managed conservatively with intravenous antibiotics (ciprofloxacin and metronidazole), a proton pump inhibitor, vitamin supplementation, analgesics, antipyretics, urinary alkalizer, and supportive therapy, followed by a gradual transition to oral medications as his condition improved. Dialysis was not required during the hospital stay. The patient was discharged in a stable condition with oral pantoprazole, tramadol, paracetamol (SOS), sucralfate syrup, citralka syrup, and furosemide, and was advised to attend outpatient follow-up after seven days.

DISCUSSION

AKI in young adults is often reversible when identified early and managed appropriately [4]. In this case, gastrointestinal fluid loss and infection were likely contributing factors leading to reduced renal perfusion. Elevated serum creatinine and urea levels confirmed impaired kidney function. Conservative management focusing on infection control, fluid balance, and renal support resulted in gradual recovery. Similar outcomes have been reported in infection-associated AKI cases managed without renal replacement therapy [5].

CONCLUSION

This case emphasizes the importance of early diagnosis and prompt management of acute kidney injury. Appropriate antimicrobial therapy, supportive care, and close monitoring can lead to favorable outcomes even in severe presentations. Timely intervention plays a crucial role in preventing long-term renal complications.

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