



# You Spin Me Right Round: A Case of Dialysis Disequilibrium Syndrome

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## Learning Objectives

1. Discuss pathophysiology and risk factors for Dialysis Disequilibrium Syndrome (DDS)
2. Review clinical manifestations of DDS
3. Provide an overview of management of DDS, and potential roles for Consult-Liaison Psychiatry in managing this clinical syndrome

## Case Report

HPI: A 36-year-old male with hypertension and diabetes mellitus type I complicated by gastroparesis and chronic kidney disease (CKD) stage V presented with jejunal intussusception.

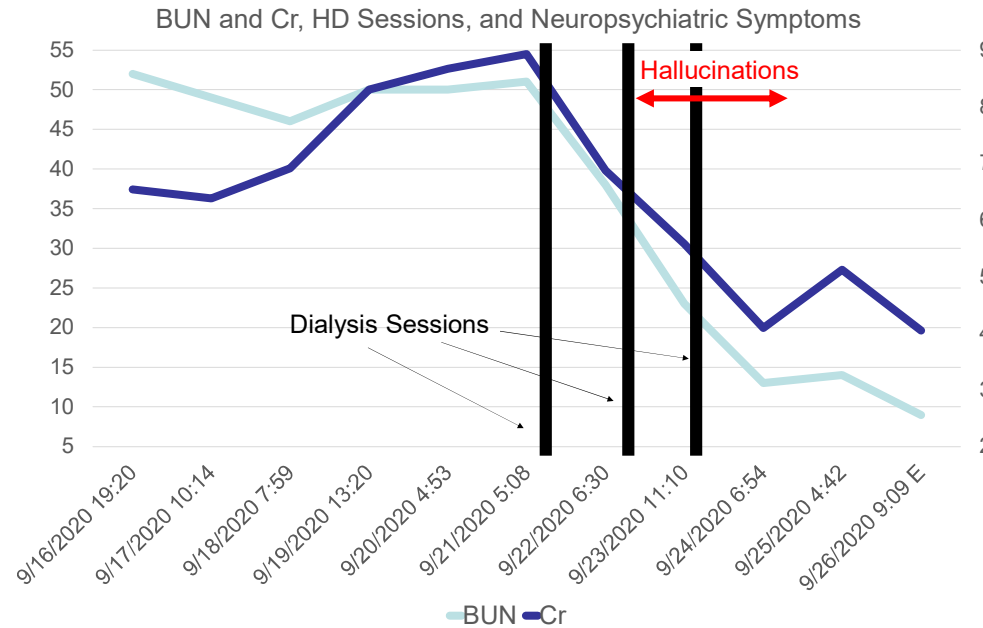
Past psychiatric history: Mild anxiety and depression managed by PCP. No history of psychosis, suicide attempt, psychiatric admission

Hospital Course: During hospitalization, he progressed to end-stage renal disease and received hemodialysis for three consecutive days. During the second dialysis session, he became rapidly confused and experienced auditory and visual hallucinations. Hospitalist started patient on Quetiapine 50 mg twice daily asked for consult-liaison psychiatry evaluation.

Exam: Following morning, insight was intact, and patient reported auditory and visual hallucinations, now resolved

Labs: BUN of 50 mg/dl and a creatinine of 8.3 mg/dl prior to initiation of HD, decreasing to 13 mg/dl and 4.09 mg/dl, respectively, four days later during consultation.

Outcome: Seroquel was changed to 12.5 mg on the morning of dialysis sessions, and 25-50 mg after return from dialysis. He had no further occurrences of the hallucinations, confusion, or disorientation, tolerated remainder of HD sessions well, and was discharged two days later.



## Discussion

- DDS is a rare, and likely underreported, condition but should be suspected in patients who develop sudden neuropsychiatric symptoms shortly after initiation or re-initiation of dialysis.
- Current strategies to address DDS are primarily preventative; however, once it occurs, treatment is supportive, including modification of dialysis prescription<sup>1</sup>.
- In our case, antipsychotics improved hallucinations related to DDS.
- As consult-liaison psychiatrists, a keen awareness for this condition can be extremely helpful to both hospitalist teams and nephrology colleagues

## Resources

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## Pathophysiology and Clinical Manifestations

- DDS occurs most classically in patients first being initiated on dialysis, after missed dialysis sessions, or with changes in regimen.
- Risk factors:
  - Extremes of age,
  - Underlying neurologic comorbidities,
  - Markedly elevated Blood Urea Nitrogen (BUN often greater than 150 mg/dl).<sup>2,4</sup>
- Pathophysiology not completely understood.
  - Prevailing view: DDS occurs when a strong osmotic gradient forms as urea is rapidly removed from the body during HD -> causing water to shift into brain cells -> leading to cerebral edema.<sup>4</sup>
  - Alternative hypotheses: changes in pH, other organic and osmotically-active compounds, and CO2 retention related to bicarbonate present in dialysate.<sup>1,4</sup>
- DDS is a spectrum of symptoms:
  - Can range from mild headache, visual changes, and alterations in mental status to severe manifestations including seizures, coma, and death.<sup>2,3,5</sup>
  - Our case is notable as our patient not only lacked several of the classic risk factors, but his presentation with primarily psychiatric symptoms also differed from the standard illness script for this condition.