Gemcitabine-Induced Toxicities in Patients with Hodgkin's Lymphoma: A Case series of Acute Kidney Injury Requiring Intensive Care Management

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BACKGROUND

- Gemcitabine is a nucleoside analog used to treat various cancers including Hodgkin's lymphoma.
- Common side effects include myelosuppression, liver dysfunction, and hypertension.
- Rarely, it can cause thrombotic microangiopathy (TMA), characterized by microvascular thrombosis, hemolytic anemia, and organ dysfunction.
- The kidneys are frequently affected.
- This series aims to report the three biopsy-proven cases of gemcitabine-induced TMA/TTP in young females with Hodgkin's lymphoma, emphasizing diagnostic challenges and management complexities.

CASE SUMMARY

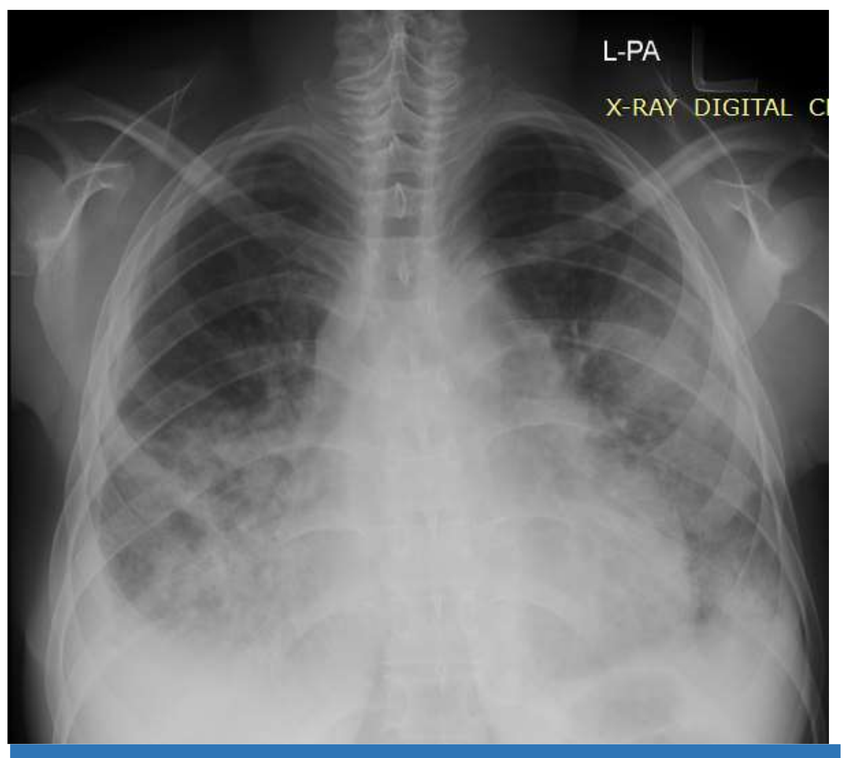
- We are reporting a three young females with Hodgkin's lymphoma who developed gemcitabine-associated TMA/TTP, presenting with acute kidney injury (AKI), hypertension, and hemolytic anemia.
- Renal biopsies confirmed TMA, and all required intensive care management, including plasmapheresis, anticoagulation, and antimicrobial therapy.
- Despite these interventions, two patients progressed to end-stage renal disease requiring long-term dialysis, while one patient succumbed to multi-organ failure

PATHOGENSIS

- Pathogenesis involves endothelial injury and microvascular thrombosis.
- Kidney involvement is nearly universal, with up to 30% requiring dialysis.
- Our series aligns with literature showing high morbidity and limited renal recovery.

CASE 1:

- A 17-year-old female with respiratory distress, edema, hypertension, and oliguria after her third gemcitabine / vinorelbine cycle.
- Labs showed thrombocytopenia, anemia, and elevated creatinine (6 mg/dL).
- Peripheral smear revealed schistocytes. Renal biopsy confirmed TTP and gemcitabine-induced TMA.
- Despite plasmapheresis, anticoagulation, and supportive care, renal recovery failed, and she became dialysis-dependent



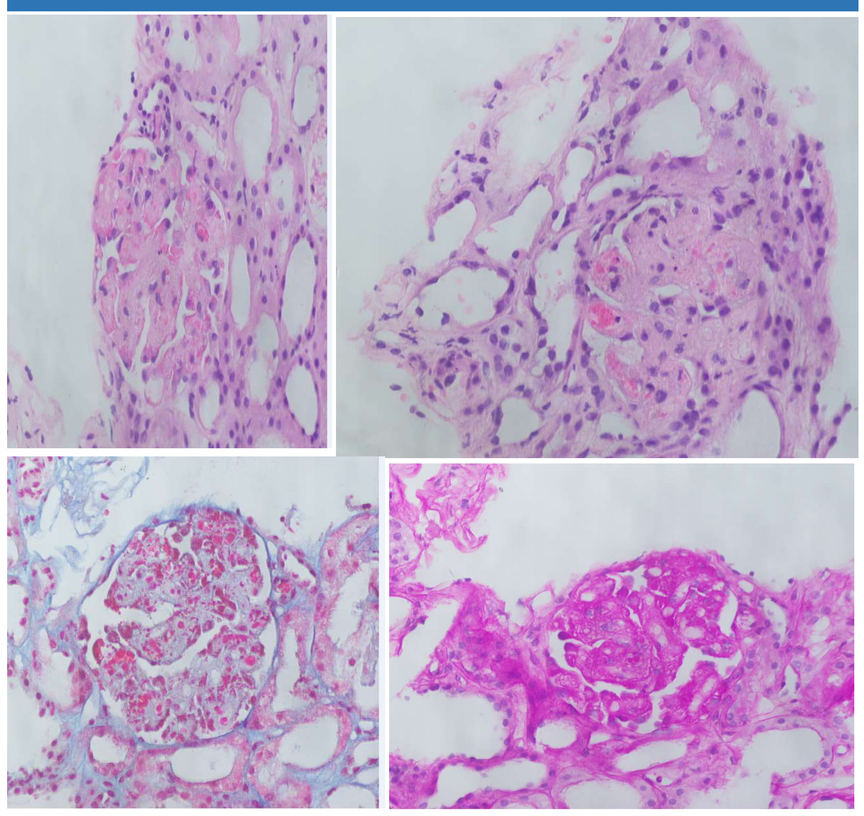
CASE 2

- An 18-year-old female with progressive Hodgkin's lymphoma developed edema and AKI after gemcitabine/vinorelbine.
- Workup revealed sub-nephrotic proteinuria, normal complements, and pericardial effusion.
- GFR was 67 mL/min.
- Despite supportive care, she later developed septic shock and multi-organ failure, resulting in death.

CASE 3

- An 18-year-old female with primary progressive Hodgkin's lymphoma presented after two cycles of gemcitabine/vinorelbine with edema, hypertension, and AKI (creatinine peaked at 3.5 mg/dL).
- Renal biopsy showed acute TMA and mild interstitial nephritis.
- Intermittent hemodialysis improved her condition, and she was discharged on nifedipine and diuretics

BIOPSY REPORT



LEARNING POINTS

- Gemcitabine-induced TMA/TTP is a devastating complication in Hodgkin's lymphoma
- Requires high clinical suspicion
- Early discontinuation of drug is crucial
- Despite intervention, renal outcomes are poor
- Long-term dialysis may be needed
- Routine monitoring of renal function and hematologic parameters during therapy is recommended.

CONCLUSION

- This case series underscores the importance of early recognition of gemcitabine-induced TMA/TTP in lymphoma patients.
- Prompt multidisciplinary management may improve survival, though renal outcomes often remain poor.

REFRENCES

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