



Acute myeloid leukemia treatment in patients with advanced chronic kidney disease

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BACKGROUND

- Patients with advanced chronic kidney disease (CKD; stages 4–5) are frequently excluded from clinical trials evaluating novel acute myeloid leukemia (AML) therapies..
- Evidence regarding treatment selection, feasibility, and outcomes in this high-risk population remains limited.
- Aim:** To characterize treatment patterns and clinical outcomes among patients with AML and preexisting stage 4–5 CKD and compare them with patients with AML without CKD.

METHODS

- We conducted a retrospective, single-institution review of adults diagnosed with AML and stage 4–5 chronic kidney disease (CKD) at Mayo Clinic between 2015 and 2026.
- Thirteen patients with advanced CKD were identified.
- We included a control cohort of 60 AML patients diagnosed during the same period who did not have advanced CKD.
- Demographic data, CKD stage and dialysis characteristics, AML risk classification, treatment intensity, response, receipt of allogeneic hematopoietic cell transplantation (alloHCT), early mortality, and overall survival (OS) were extracted.

RESULTS (CKD patients)

- Among 13 patients with AML and advanced CKD, most had stage 5 disease (77%) rather than stage 4 (23%), and 4 (31%) had undergone prior renal transplantation.
- Hemodialysis was required within 2 months of treatment initiation in 11 patients (85%), with access via central line catheter (64%), arteriovenous fistula (27%), or peritoneal catheter (9%).
- Dialysis-related thrombosis occurred in 4 patients (36%), with no dialysis-related bleeding events, and 5 patients (38%) received more than one line of therapy (median 1, IQR 1–2).

Figure 1. Swimmer’s Plot for Treatment Course and Clinical Outcomes Among Patients With AML and Advanced CKD

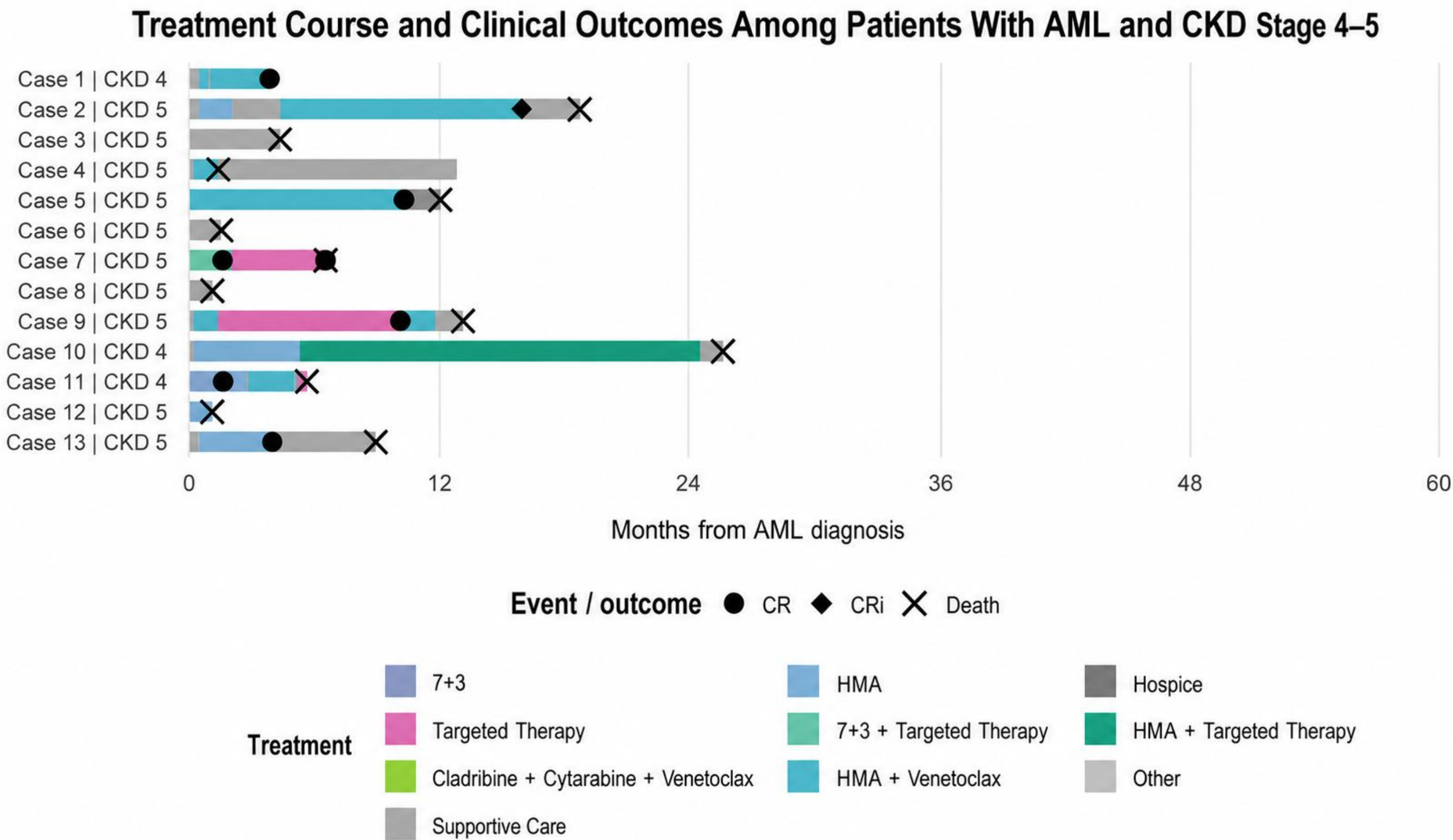
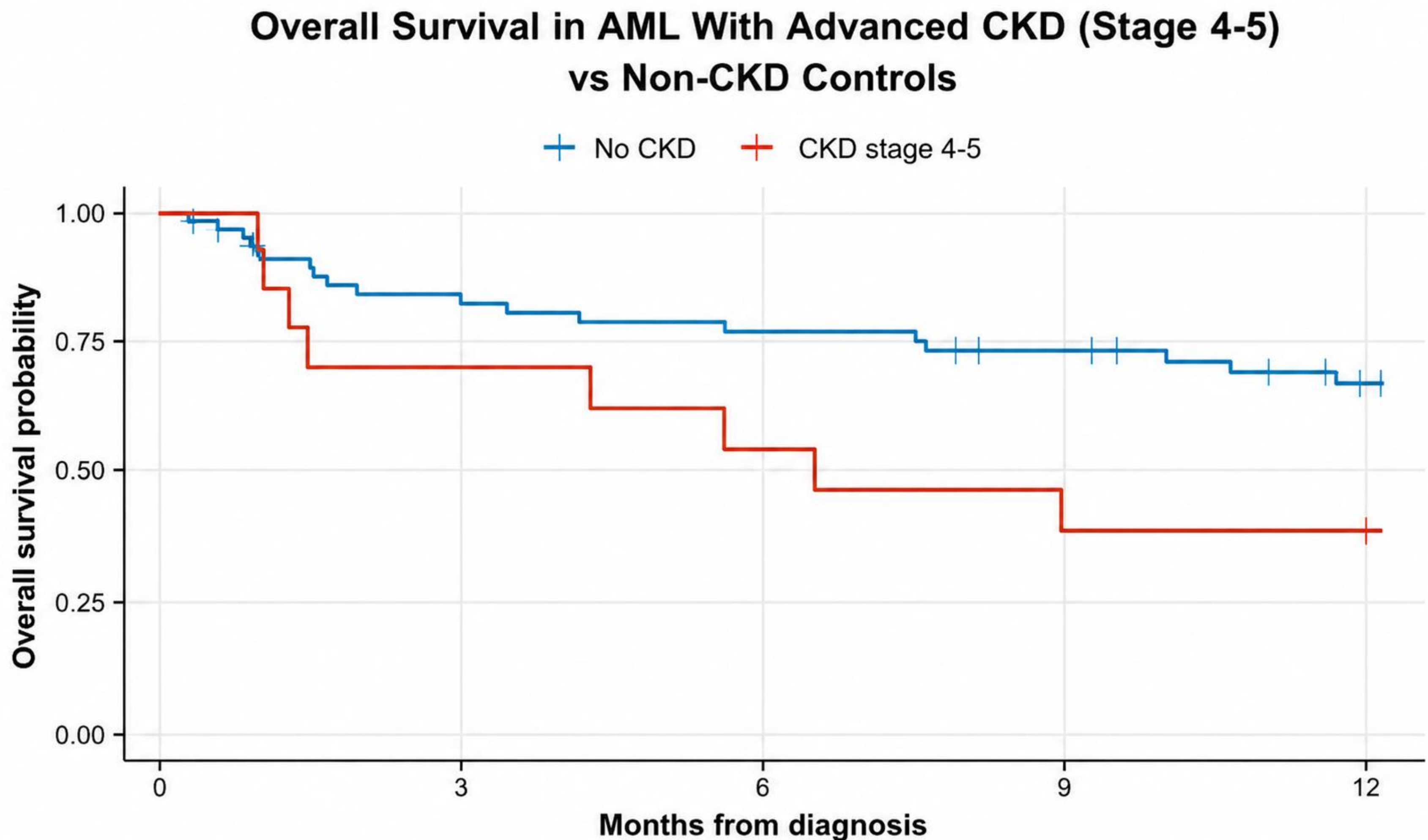


Figure 2: Overall Survival Among Patients With AML by in CKD vs non-CKD groups



RESULTS (CKD vs Controls)

Variable	Non-CKD controls (n=60)	CKD stage 4–5 (n=13)	P
Received AML-directed treatment	57/60 (95.0%)	10/13 (76.9%)	0.065
Intensive treatment	23/60 (38.3%)	2/13 (15.4%)	0.109
CR/CRi	37/60 (61.7%)	7/13 (53.8%)	0.756
AlloHCT after diagnosis	24/60 (40.0%)	1/13 (7.7%)	0.028
90-day mortality	10/60 (16.7%)	4/13 (30.8%)	0.208
Median OS, months (95% CI)	12.4 (7.3–18.5)	6.5 (1.5–NE)	0.19
1-year OS (95% CI)	66.1% (54.8–79.8)	38.5% (19.3–76.5)	0.054

CONCLUSIONS

- Patients with advanced CKD achieved response rates comparable with those of patients without CKD despite numerically lower treatment receipt and survival.
- Access to alloHCT was significantly lower among patients with advanced CKD.
- Advanced CKD should not automatically preclude AML-directed therapy, particularly lower-intensity treatment.
- Greater inclusion of patients with advanced CKD in prospective and pragmatic trials is needed to define optimal treatment strategies, reduce early mortality, and ensure equitable access to transplantation

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