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Predictors of Kidney Outcome in AL Amyloidosis: Hematologic and Kidney Responses

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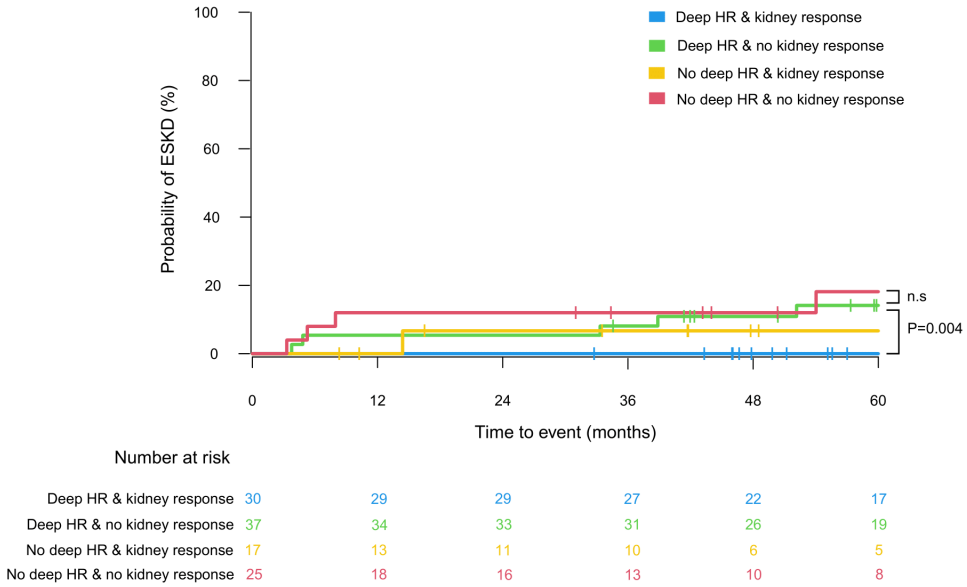
Objectives : Light chain amyloidosis, characterized by amyloid fibril deposition in multiple organs, often leads to progression to end-stage kidney disease (ESKD). This study aimed to identify predictors of kidney survival in patients with kidney amyloidosis, focusing on hematologic and kidney response (KR).
Methods : This retrospective study included 138 patients diagnosed with kidney amyloidosis between 2011 and 2019. Palladini et al.'s criteria were applied for kidney stage and response, and the 2012 ISA criteria for hematologic response (HR).
Results : Overall, 17 (12.3%) progressed to ESKD. Multivariate analysis, considering baseline characteristics, revealed that kidney stage II was associated with an increased risk of ESKD compared to stage I (HR 3.75, 95% CI 1.38–10.15; P = 0.01). Compared to KR, the risk of ESKD increased by 8.42 (95% CI 1.71–41.35; P = 0.01) and 7.36 (95% CI 1.25–43.33; P = 0.03) times in stable disease and kidney progression at 6 months, independently on baseline characteristics, respectively, whereas HR and free light chain difference showed no association with kidney outcome. Kidney survival was longer in patients with both deep HR and KR than in those with only HR (P = 0.004). Despite achieving deep hematologic response, improvements in eGFR and proteinuria were insignificant after 12 months post-treatment.
Conclusions : The study underscores the importance of KR over HR in predicting ESKD and emphasizes the need to assess treatment endpoints, considering organ response alongside HR.

Figure_APCN&KSN-1.png



Number at risk

Deep HR & kidney response	30	29	29	27	22	17
Deep HR & no kidney response	37	34	33	31	26	19
No deep HR & kidney response	17	13	11	10	6	5
No deep HR & no kidney response	25	18	16	13	10	8

Figure 2. The participants were categorized into four groups based on hematologic response and kidney response at 6 months. Kidney survival was longer in patients with both deep hematologic response and kidney response than those with only hematologic response (P=0.004). Deep hematologic response was defined the achievement of at least VGPR. ESKD, end-stage kidney disease; HR, hematologic response; VGPR, very good partial response