

**Guidelines for high dose chemotherapy and stem cell transplantation for
systemic AL amyloidosis**

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Introduction:

AL amyloidosis is a systemic amyloidosis and is associated with an underlying plasma cell dyscrasia. High dose intravenous melphalan and autologous stem cell transplantation was developed for the treatment of AL amyloidosis in the early 1990s and was prompted by its success in myeloma. This application has evolved significantly over the past 3 decades. These guidelines provide a comprehensive assessment of eligibility criteria, stem cell collection and mobilization strategies and regimens, risk-adapted melphalan dosing, role for induction and consolidation therapies and hematologic response and organ responses following stem cell transplantation. Continued efforts to refine patient selection and management, and incorporate novel anti-plasma cell agents in combination or sequentially to further improve outcomes in AL amyloidosis are needed.

Eligibility Criteria:

Selection of patients for high dose chemotherapy and stem cell transplantation is crucial as treatment related morbidity and mortality is significant when compared to myeloma due to organ dysfunction, organ failure and poor performance status. Treatment related mortality has decreased over several decades from 20% to <5% due to careful patient selection, availability of effective non-SCT therapies and patient selection driven by cardiac biomarkers.

Eligibility criteria vary for centers depending on the experience, policies and standard operating procedures, however, only 20-30% of newly diagnosed patients are eligible for this aggressive treatment. A “deferred” eligibility is achievable if organ function significantly improves after induction chemotherapy.

Broad eligibility criteria for SCT in AL amyloidosis are as follows:

- Confirmed tissue diagnosis of amyloidosis and accurate typing proving AL amyloidosis
- Clear evidence of a clonal plasma cell dyscrasia
- Age >18 years and <70 years
- At least one major vital organ involvement
- LV ejection fraction $\geq 40\%$, NYHA class <III
- Oxygen saturation 95% on room air, DLCO >50%
- Supine systolic blood pressure ≥ 90 mm Hg
- ECOG performance status score ≥ 2 unless limited by peripheral neuropathy.
- Direct Bilirubin <2 mg/dL
- NTproBNP <5000 pg/mL
- Troponin I <0.1 ng/mL and Troponin T <60 ng/L
- eGFR >30 mL/min/m²
- Patients on dialysis for ESRD should not be excluded if other eligibility criteria met

Definite exclusions for SCT in AL amyloidosis are as follows:

- Symptomatic and/or medically refractory ventricular and atrial arrhythmias
- Symptomatic and/or medically refractory pleural effusions
- Uncompensated heart failure
- Orthostatic hypotension refractory to medical therapy

Induction therapy prior to SCT:

Survival in AL amyloidosis is predicted by the depth and, in those with significant organ dysfunction, speed of hematological response, as well as the duration of suppression of the underlying plasma cell clone. For those who can tolerate the procedure, SCT has been shown over a number of decades to achieve each of these: deep responses, quick responses, and long durations of response. Historically, because of the underlying low burden of bone marrow plasma cells, initial debulking induction chemotherapy as used in myeloma was not thought to be necessary. Induction therapy was also postulated to impair outcomes due to clinical deterioration of organ function during the induction phase making some patients ineligible for SCT.

This approach has been challenged by the development of novel agent induction protocols. Several retrospective and prospective studies have demonstrated that bortezomib-based induction therapy is feasible and associated with high responses (**Table 1**). The only randomized study of SCT with or without bortezomib-based induction, conducted in patients with renal AL amyloidosis, also reported superior hematologic responses and overall survival favoring the bortezomib induction arm. Conflicting reports have been published on whether those with bone marrow plasmacytosis $\geq 10\%$ benefit from induction, although these studies were not confined to those receiving bortezomib-based protocols. Use of induction allows the option of deferral of SCT in the event of good clonal control or alternatively may lead to an organ response by the time the SCT is delivered, potentially increasing the proportion of patients

becoming transplant eligible and decreasing the likelihood of transplant-related mortality or further organ damage.

The Dara-VCd (daratumumab, bortezomib, cyclophosphamide, dexamethasone) regimen further improves the speed and depth of hematologic response. Such induction will become the preferred initial therapy for both pragmatic reasons, as chemotherapy can be commenced immediately, and due to therapeutic effectiveness. Whether consolidation with SCT will then optimize the duration of disease control as it does in myeloma induced with the VCD regimen (Cavo Lancet Haematol 2020) remains to be tested, particularly in those achieving complete hematologic response to induction therapy.

The use of Dara-VCd induction before SCT has not been systematically studied, but several points can be inferred from the Andromeda study which was largely performed in the non-transplant setting. In the prospective studies of bortezomib and dexamethasone, two to four cycles of induction were administered. With Dara-VCd, the median time to complete response was 60 days and nearly all the dFLC reduction occurred by the end of cycle 4. As such, it would seem reasonable to deliver two to four cycles of dara-VCd induction prior to planned SCT. For patients who achieve hematologic complete response after two to four cycles of induction therapy, however, consideration should be given to completing induction without SCT which could be delayed to the first suggestion of hematologic relapse.

Stem cell mobilization and collection:

Contrary to the common experience in multiple myeloma, deaths have been reported during mobilization and leukapheresis of patients with AL amyloidosis who have cardiac or multiorgan involvement. Overall, the incidence of major complications, during stem cell mobilization and

collection is approximately 15%. Stem cell mobilization is associated with unusual morbidity of hypotension, hypoxia, cardiac arrhythmia and fluid retention in AL amyloidosis. The risk for side effects is especially increased in patients who already have fluid retention due to nephrotic syndrome or congestive heart failure. The toxicity during mobilization and collection have the potential to delay or hamper treatment with high-dose chemotherapy due to worsening of performance status or organ function. Some patients with advanced cardiac involvement and hypotension may benefit from inpatient cardiac monitoring and fluid management during stem cell mobilization and collection.

The recommended target dose of CD34+ cells in patients is at least 5×10^6 CD34+ cells/kg. Plerixafor, CXCR4 receptor antagonist, as a stem cell mobilization regimen along with abbreviated dose of G-CSF can be beneficial in patients with fluid overload to reduce the dose of G-CSF and hence the risk of capillary leak syndrome and also reduce the number of leukapheresis sessions needed for optimal stem cell collection yield. Monitoring of patient weight, electrolytes, blood pressure, oxygen saturation and platelet counts before and after stem cell collection is recommended.

The recommended dose of G-CSF is 10-16 mcg/kg/day, either as a single dose or in two divided doses, 3-4 days prior to stem cell collection. Cyclophosphamide and G-CSF mobilization may be utilized for stem cell mobilization in patients with myeloma associated AL amyloidosis as per institutional guidelines. Pre- and post-cyclophosphamide intravenous hydration should be used with extreme caution in patients with cardiac and renal involvement from AL amyloidosis. Use of mesna to prevent hemorrhagic cystitis is recommended with cyclophosphamide.

Conditioning regimen:

High dose melphalan is the standard conditioning regimen used prior to SCT in patients with plasma cell disorders and is associated with deep and durable responses in patients with AL amyloidosis. However, initial studies using full-intensity conditioning with melphalan 200 mg/m² in patients with AL amyloidosis reported high rates of treatment-related mortality (TRM) (~20%) which was particularly evident in patients with advanced age, congestive heart failure and/or multiorgan involvement. To reduce treatment-related complications, modified melphalan dosing (100-140 mg/m²) has been used in patients who are at highest risk of morbidity and mortality from SCT.

- Risk-adapted melphalan dosing based on age, cardiac and renal function (**Table 2**) is associated with reduced TRM (2-10%).
- Modified dose melphalan (140 mg/m²) is associated with lower CR rates (34-47%) compared to full-intensity conditioning (45-53% CR) as well as shorter OS (median OS 5.2 vs 10.5 yrs, $P<.0001$; and 4-year OS 54% vs 86%; $P<0.001$).
- Modified doses of melphalan (140mg/m²) in selected patients result in favorable overall and event-free survivals (median OS and EFS, 6.1 and 4.3 years, respectively), with median OS reaching 13.4 years for patients who achieve a hematologic CR.

In summary, while full-dose melphalan conditioning has been associated with improved outcomes, the patients who are eligible to receive melphalan at 200 mg/m² are a healthier population. Modified melphalan conditioning with melphalan at 140 mg/m² in patients who are ineligible for melphalan at full-dose is an effective treatment option associated with low TRM and prolonged OS, especially in patients who achieve a hematologic CR.

Alternative conditioning approaches in AL amyloidosis have also been explored in clinical trials and these include incorporation of bortezomib into conditioning with melphalan,

propylene glycol-free melphalan and pharmacokinetically-directed melphalan dosing which has the potential to more precisely individualize therapy since body surface area-based dosing of melphalan is associated with significant inter-patient variability in melphalan exposure.

In the context of novel regimens that rapidly induce deep hematologic remissions the role of high dose therapy and SCT in AL amyloidosis will necessarily evolve. Patients with advanced organ disease who achieve optimal responses to induction are unlikely to benefit from high dose melphalan in the frontline setting. Rather, these patients who are at greatest risk of toxicity from SCT may become better candidates once their organs have time to improve. Patients who fail to achieve a hematologic VGPR or CR with induction therapy should be offered full or modified intensity melphalan and SCT if eligibility criteria are met.

Consolidation and Maintenance therapy following SCT:

While high dose melphalan and SCT can induce remissions in patients with AL amyloidosis, with risk-adapted melphalan dosing approximately 24-43% of patients achieve hematologic CR. As a concept, consolidation therapy is commonly defined as a distinct course of therapy consisting of a limited number of cycles with the aim to increase the depth of the *hematologic response* and, subsequently frequency of organ response and overall outcome. Maintenance therapy, on the other hand is intended to be applied for a prolonged amount of time with the goal of preventing *hematologic progression* and subsequent organ deterioration.

Few data exist to guide management in these settings.

- Phase II data suggests bortezomib and dexamethasone (BD) administered to patients with AL amyloidosis who had not achieved CR at 3 months post-SCT was associated with an 86% improvement in hematologic response and all patients responded within 1 cycle.

- A retrospective study by the Mayo group evaluated 471 patients with AL amyloidosis who underwent SCT and identified 72 (15%) who received consolidation with proteasome inhibitors (PIs) (33%), immunomodulating agents (IMiD) (29%) or PIs and IMiDs (28%). The CR rate improved from 11% to 40% with consolidation. Patients with <VGPR who received consolidation had better PFS (median 22.4 versus 8.8 months, $P < .001$) and a trend towards better OS. In patients with \geq VGPR post-SCT, consolidation did not improve PFS or OS.
- A single retrospective study analyzed 50 patients with AL amyloidosis who underwent SCT including 28 patients who received maintenance therapy for longer than 6 months post-transplant, most with IMiD-based maintenance, primarily lenalidomide. No significant difference in PFS ($P = 0.66$) or OS ($P = 0.32$) was demonstrated including among patients with a high burden of bone marrow plasma cells (BMPCs) ($> 10\%$) at baseline.
- A clinical trial using Ixazomib as maintenance post-ASCT in patients with AL amyloidosis who have $>10\%$ BMPCs at diagnosis is currently accruing (ClinicalTrials.gov identifier: NCT03618537).

Taken together, the available data suggests a potential role for a limited course of consolidation in patients with <VGPR post-ASCT with the goal of inducing deeper remission. However, the potential benefit of consolidation must be balanced with the risk of toxicity. For patients who achieve \geq VGPR after SCT but have ongoing organ impairment or organ deterioration, it must be recognized that deeper hematologic response may not confer organ response or improvement. Maintenance after high dose therapy and SCT has not been routinely used or systematically studied in AL amyloidosis and there does not appear to be a role for long term lenalidomide-based maintenance therapy. Ongoing studies will hopefully provide insight into the use ixazomib and daratumumab in this setting.

Hematologic and Organ Responses:

Deep and durable hematologic responses can be achieved after SCT in AL amyloidosis. Hematologic response assessment should be performed at 3-6 months after SCT. Bone marrow aspiration and biopsy are not needed to assess for validated hematologic response but are required for assessment of minimal residual disease. Deep hematologic responses indicated by normalization of serum free light chain levels along with absence of monoclonal protein in serum and urine by immunofixation electrophoresis are desirable. The goal should be to achieve a complete hematologic response or very good partial hematologic response with an organ response. It is imperative to note that the organ responses can lag behind the hematologic response by 6-12 months and can continue to occur gradually over many years after SCT. Hematologic and organ responses predict for overall survival in AL amyloidosis. Institution of additional therapy directed towards the plasma cell dyscrasia should weigh the risks and benefits and follow complete recovery from the toxicities of SCT. It should not be instituted solely for organ progression in the setting of adequate hematologic response, unless indicated by other measures and individualized.

Hematologic responses of partial response or better following SCT can be achieved in 80-85% of patients; and hematologic complete response in 30-50% of patients. Hematologic relapse occurs in 32% of patients after achievement of a CR at a median of 4.3 years (range, 1.4-21.5).

Overall organ responses can be achieved in 54% of patients with renal involvement, in 62% of patients with cardiac involvement, and in 56% of patients with liver involvement. Majority of patients achieving renal and cardiac responses achieved response at 6 or 12 months following SCT; ~ 80% within 12 months post SCT. Impact of organ response on survival for

each hematologic response category is also evident after SCT. Achievement of organ response for any given hematologic response has an overall survival benefit. Patients achieving hematologic VGPR with no organ response have lower overall survival.

Special circumstances:

SCT in Special Circumstances

Patients with advanced single organ dysfunction due to AL have a potential to receive solid organ transplant(s) or, in case of renal failure, be on renal replacement therapy and, can become suitable candidates for consideration of SCT. Data on outcomes of SCT in these groups remain limited. In renal patients, SCT can be undertaken before or after renal transplantation whilst in cardiac (and the rare liver) transplant recipients, SCT is always after the organ transplant. The considerations in this special group includes fitness for SCT based on criteria for AL in general after the organ transplant, management of immunosuppression during stem cell harvesting and the impact of function of the transplanted organ on risks of SCT as well as the potential risk of (ir)reversible transplanted organ dysfunction during SCT when SCT is undertaken following solid organ transplantation.

Mycophenolate mofetil and azathioprine can interfere with stem cell mobilization; the impact of calcineurin inhibitors is less pronounced but data remains limited. Withdrawal or modification of immunosuppressive drugs prior to stem cell mobilization should be coordinated with the respective solid organ transplant teams to monitor for increase in risk of organ rejection.

Patients on dialysis can safely undergo SCT with TRM and morbidity comparable to patients with AL amyloidosis not on dialysis. In a series of 32 patients from Boston undergoing SCT on dialysis, the TRM was 8% with a complete hematologic response achieved in 70% and median overall

survival 5.8 yr (8 years for patients in CR).¹ A study at the Mayo clinic of patients with advanced renal amyloidosis showed that whilst requirement for dialysis during or soon after SCT was associated poorer outcomes, being on dialysis at the time of SCT did not have an adverse impact on prognosis.² Experience of a small number of patients with AL undergoing SCT following renal transplantation³⁻⁵ suggests no adverse impact of renal graft function or loss of renal graft due to complications during SCT and longer term patient outcomes determined by depth of hematologic response.

Highly selected younger patients with advanced end stage cardiac AL may be suitable for heart transplantation (HT) as a lifesaving procedure. The need for deep and prolonged suppression of the amyloidogenic light chains following heart transplantation to prevent amyloid recurrence makes highly effective anti-plasma cell treatment an important component of the pathway. The UK group initially reported series of 5 patients undergoing successful SCT following a heart transplant.⁶ Recently, a US collaborative group reported nine patients who underwent SCT at median 13.5 months following HT with median OS of 87.5% at 1 year and 76.6% at 5 years.⁷ The experience from Boston of 8 patients undergoing sequential HT-SCT suggests comparable to institutional outcomes for non-amyloid HT recipients' (OS of 60% in amyloid vs. 64% in nonamyloid HT at 7 yrs. (P=0.83)).⁸ Limited data on patient outcomes as well as the additional risks and interaction of chemotherapy with immunosuppression as well as potential cardiac toxicity or higher risk of organ rejection (with IMiD's) are important considerations in decisions about the choice of anti-plasma cell therapy following heart transplantation. All patients undergoing consideration for a heart transplant, should also be assessed by an experienced transplant team for eligibility for SCT – the suitability for sequential HT-SCT should be a crucial consideration in selection of suitable candidates for a heart transplant.

Patients with advanced liver amyloidosis often have significant involvement of other organs and are rarely organ transplant candidates – although, should a patient receive a successful liver transplant for end stage liver amyloidosis, SCT as a consolidation/treatment procedure can be considered if the patient satisfies the other standard inclusion criteria.

Supportive care:

Supportive treatment aimed at preventing and minimizing complications during pre, peri and post-SCT period has an important impact on survival. Supportive care should be considered a fundamental part of an integrated treatment approach to these patients and requires the coordinated expertise of several specialists who are familiar with this disease.

Stem cell mobilization and collection phase

- Stem cell mobilization should be performed preferably with GCSF +/- plerixafor.
- Patients with significant cardiac involvement and CHF should undergo stem cell mobilization with GCSF and planned plerixafor to avoid excessive fluid retention.
- Patients should be assessed daily (before and after stem cell collection) during this phase and volume overload should be managed with intravenous loop diuretics.
- Use of cardiac monitoring/telemetry is recommended in patients with cardiac involvement and CHF, hypotension, presyncope or arrhythmia.
- Hypotension should be managed with midodrine.

Peri-stem cell transplantation phase

- GCSF post SCT till neutrophil engraftment

- Antimicrobial prophylaxis – fluoroquinolone, acyclovir or valacyclovir, fluconazole, if allergic to fluoroquinolone, consider penicillin or doxycycline in consultation with infectious disease based on antibiogram for the institution
- GI prophylaxis with proton pump inhibitor
- Transfusion parameters, Hemoglobin of <8 g/dL for blood transfusion, Platelet count of $<10k$ or $<20k$ if bleeding and with fever
- Febrile neutropenia – follow institutional guidelines, avoid aminoglycosides for the risk of nephrotoxicity
- Special circumstances – Albumin infusion if serum albumin <2 g/dL due to advanced nephrotic syndrome, can be repeated daily or few times a week; cardiac monitoring with telemetry for all patients with cardiac involvement; avoidance of beta blockers and calcium channel blockers if atrial fibrillation occurs; consideration for amiodarone prophylaxis in patients with cardiac arrhythmias or Holter monitor with ventricular ectopy; judicious use of midodrine for blood pressure support; loperamide and diphenoxylate/atropine (Lomotil) use for melphalan-induced diarrhea

Post-stem cell transplantation phase

- Antimicrobial prophylaxis for VZV to be continued for 12 months post SCT
- Prophylaxis for pneumocystis pneumonia to be continued for 3 months post SCT
- Immunization schedule per institution policy

Table 1. Selected studies of (pre-transplant) induction in AL amyloidosis

Author	Publication year	Study design	Induction Regimen	N	Didn't proceed to ASCT	(Post-ASCT) ITT Hematologic Response			Overall survival	Comments
						CR	≥VGPR	≥PR		
Huang	2014	RCT	Vd x2 cycles	28	0%	68%*	75%	86%*	2yr OS 95%*	All renal amyloidosis. No MVA
			Nil	28		36%	46%	48%		
Sanchorawala	2004	RCT	MP x2 cycles	48	33%	17%		NR	2yr OS 54%	Induction no longer applicable
			Nil	52		21%		NR		
Sanchorawala	2015	Phase 2	Vd x2 cycles	35	14%	49%	29%	77%	3yr OS ~83%	No formal comparative group although CR and OS superior to historic controls with no induction
Minnema	2019	Phase 2	Vd x4 cycles	50	30%	32%	50%	60%	3yr OS 86%	No comparative group
Landau	2020	Prospective pilot	Vd x1-3 cycles	19	11%	37%	75%	95%	2yr OS 84%	No comparative group
Scott	2014	Retrospective cohort	V-based 67%	18	N/A	44%	61%	83%	2yr OS 100%	<i>Excluded patients who failed to proceed to ASCT. Better cardiac responses with induction</i>
			Nil	13		46%	61%	69%		
Hwa	2016	Retrospective cohort	Multiple (V-based n=12)	145	N/A	41%	55%	79%	NR [#]	<i>Excluded patients who failed to proceed to ASCT. No OS benefit of induction if BMPCs<10% or Mayo 2012 stage I-II</i>
			Nil	270		39%	51%	79%		
Cowan	2016	Retrospective cohort	Multiple	21	N/A	50%*	63%	64%	3yr OS 95%	<i>Excluded patients who failed to proceed to ASCT. Almost 50% were not evaluable for response</i>
			Nil	44		29%	43%	71%		

Dittus	2016	Retrospective cohort (outcomes limited to BMPC >10% group)	MP or Vd (V-based n=9)	25	N/A	NR		NR	Median 5.8yrs	<i>Excluded patients who failed to proceed to ASCT. Induction didn't benefit pts with BMPC ≥10%. No MVA</i>
			Nil	76		NR	NR	Median 7.8yrs		
Afrough	2018	Retrospective cohort (novel vs conventional chemo vs no induction)	Novel (V-based n=42)	83	N/A	19%		87%*	2yr OS 87%*	<i>Excluded patients who failed to proceed to ASCT. In MVA, induction predicted better OS</i>
			Conventional	25		25%		63%	2yr OS 76%	
			Nil	20		10%		60%	2yr OS 73%	
Jain	2018	Retrospective cohort	V-based (mostly VCd)	34	N/A	29%	56%	74%	Median not reached at 3.8yrs*	<i>Excluded patients who failed to proceed to ASCT.</i>
			Nil	29		14%	59%	59%	Median 4.5yrs	
Other studies										
Cornell	2015	Retrospective cohort (ASCT ineligible)	Vd or VCd (median 6 cycles)	28	29% became ASCT eligible	36%	50%	93%	3yr OS 50-64%	V-based induction may enable some patients to become ASCT eligible
Manwani	2018	Retrospective cohort of deferred ASCT		22		NR		NR	NR	Induction enables some patients to subsequently become ASCT eligible, either at consolidation or relapse
Abdallah	2020	Retrospective cohort of initial vs deferred ASCT	V-based 32%	527	N/A	N/A		N/A	Median 13yrs	<i>Excluded patients who failed to proceed to mobilization. Patients who received induction had better OS with early ASCT</i>
			Initial							
			Deferred	124		N/A		N/A	Median 11.4yrs	

Vaxman	2020	Retrospective cohort (assessing impact of pre-ASCT response)	V-based 80%	128	N/A	18%	49%	87%	Median not reached at 4.3yrs	<i>Excluded patients who failed to proceed to ASCT. Deeper pre-ASCT responses predict better OS</i>
Kastritis	2021?	RCT (<i>non-ASCT</i>)	D-VCd x6 cycles	195	N/A	53%	79%	92%	27 deaths	Follow-up for OS not mature
			VCd x6 cycles	193	N/A	18%	49%	77%	29 deaths	
Manwani	2019	Prospective, observational study (<i>non-ASCT</i>)	V-based	915	N/A	25%	45%	61%	Median 6yrs	5yr OS 78% in patients assessed as eligible for ASCT

ASCT, autologous stem cell transplantation; BMPC, bone marrow plasma cells; CR, complete response; D-VCd, daratumumab, bortezomib, cyclophosphamide, dexamethasone; ITT, intent to treat; MP, melphalan and prednisolone; MVA, multivariate analysis; N/A, not applicable; NR, not reported; OS, overall survival; PR, partial response; RCT, randomized controlled trial; VGPR, very good partial response

OS better with induction if BMPCs >10%

* p<0.05

Table 2. Risk-Adapted Melphalan Dosing prior to ASCT

	MEL 200*	Multidisciplinary discussion MEL 200 vs MEL 140	MEL 140**
Age (years)	< <u>65</u>	<u>66-69</u>	≥ 70
Cardiac stage	I	II	III
eGFR (mL/min/m ²)	> 50	<u>30-50</u>	≤ 30

*Patient must meet **all** criteria to receive MEL 200

** If patient meets **any** of the criteria, recommend MEL 140

Table 3: Response criteria

Category	Criteria
Hem Response	CR: <ul style="list-style-type: none"> • Absence of monoclonal protein in serum and urine by IFEs • Either a FLC ratio within the reference range or the uninvolved FLC concentration is greater than involved FLC concentration with or without an abnormal FLC ratio
	VGPR: dFLC <40 mg/L
	PR: 50% reduction in dFLC
Organ Response	Renal: 30% reduction in 24-h urine protein excretion or a drop of proteinuria below 0.5 g/24 hr in the absence of decrease in eGFR to 25% over baseline
	Heart: reduction of NTproBNP of 30% and >300 pg/mL from baseline value, baseline NTproBNP has to be ≥ 650 pg/mL
	Heart: reduction of BNP of 30% and >50pg/mL from the baseline value, baseline BNP has to be ≥ 150 pg/mL

*Validated hematologic response criteria used Freelite assay for assessment of serum free light chain levels

** Hematologic response criteria are being currently refined with incorporation of levels of iFLC <20 mg/L and/or dFLC <10 mg/L.

Disclaimer:

These recommendations are meant to assist clinicians in making decisions regarding treatment of patients with amyloidosis. Adherence to these recommendations will not ensure successful treatment in every situation. Furthermore, these recommendations should not be interpreted as setting a standard of care, or be deemed inclusive of all proper methods of care nor exclusive of other methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific therapy must be made by the physician and the patient in light of all the circumstances presented by the individual patient, and the known variability and biological behavior of the disease. These recommendations reflect the best available data at the time this document was prepared. The results of future studies may require revisions to the recommendations in this document to reflect new data.

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