Neue zugelassenen Therapien und zukünftige Perspektiven in der Behandlung von

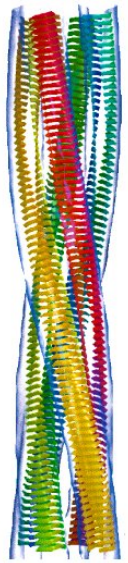
AL Amyloidosen

Hermine Agis
Department of Internal Medicine I
Medical University Vienna

Was ist eine Amyloidose und wie entsteht eine Amyloidose

- **Kugelige** Gestalt: richtig & **gesund**

- **Fadenförmige** Gestalt: falsch & **krank**



1) Fibrillären / Fadenförmigen Bestandteile

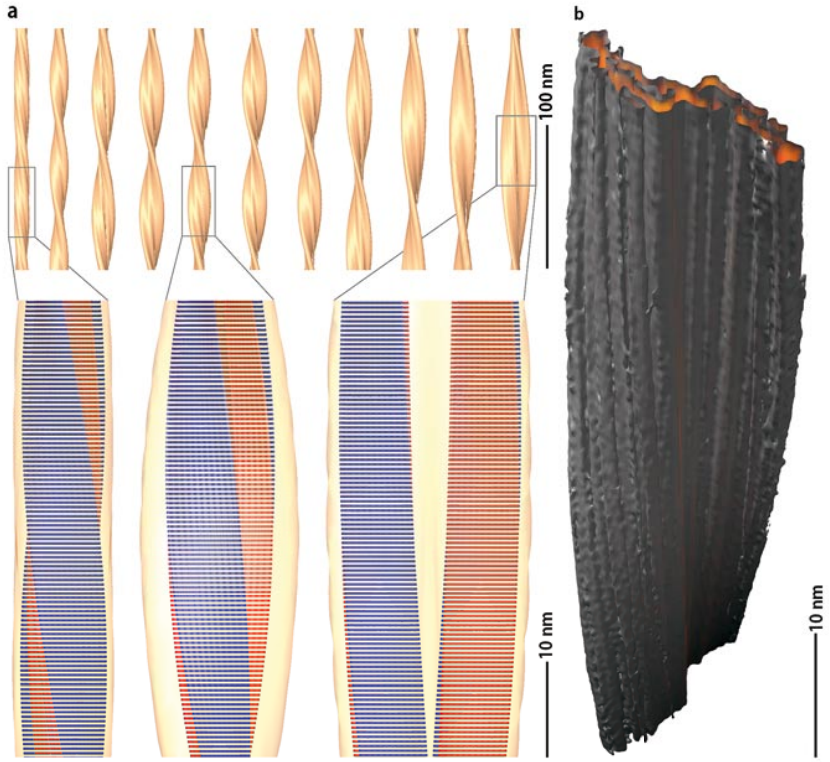


Abb. 4 ▲ Dreidimensionale Struktur verschiedener Fibrillenmorphologien des Aβ(1–40)-Peptids basierend auf Kryoelektronenmikroskopie. **a** *Obere Reihe*: Seitenansicht von 11 verschiedenen Fibrillen. *Untere Reihe*: β-Faltblattmodell von 3 dieser Fibrillen (β-Faltblätter *rot* oder *blau*; [15]). **b** Aufsicht auf den Querschnitt einer Aβ(1–40)-Fibrille, die mit einer Auflösung von etwa 8 Å rekonstruiert wurde [21].

Durch die Zusammenlagerung der Eiweiß-Fäden bilden sich richtige Platten aus.

Die lagern sich dann in den unterschiedlichen Organen ab

Dadurch gestört Organfunktion bis zum totalen Funktions udnu Organverlust.

2) zusätzliche Bestandteile

Gewebespezifischen Bestandteile: GAG GlycosAminoGlykane

- Teil eines jeden Bindegewebes
- Wirken als **Anker**
- **Nicht kovalente** Bindung

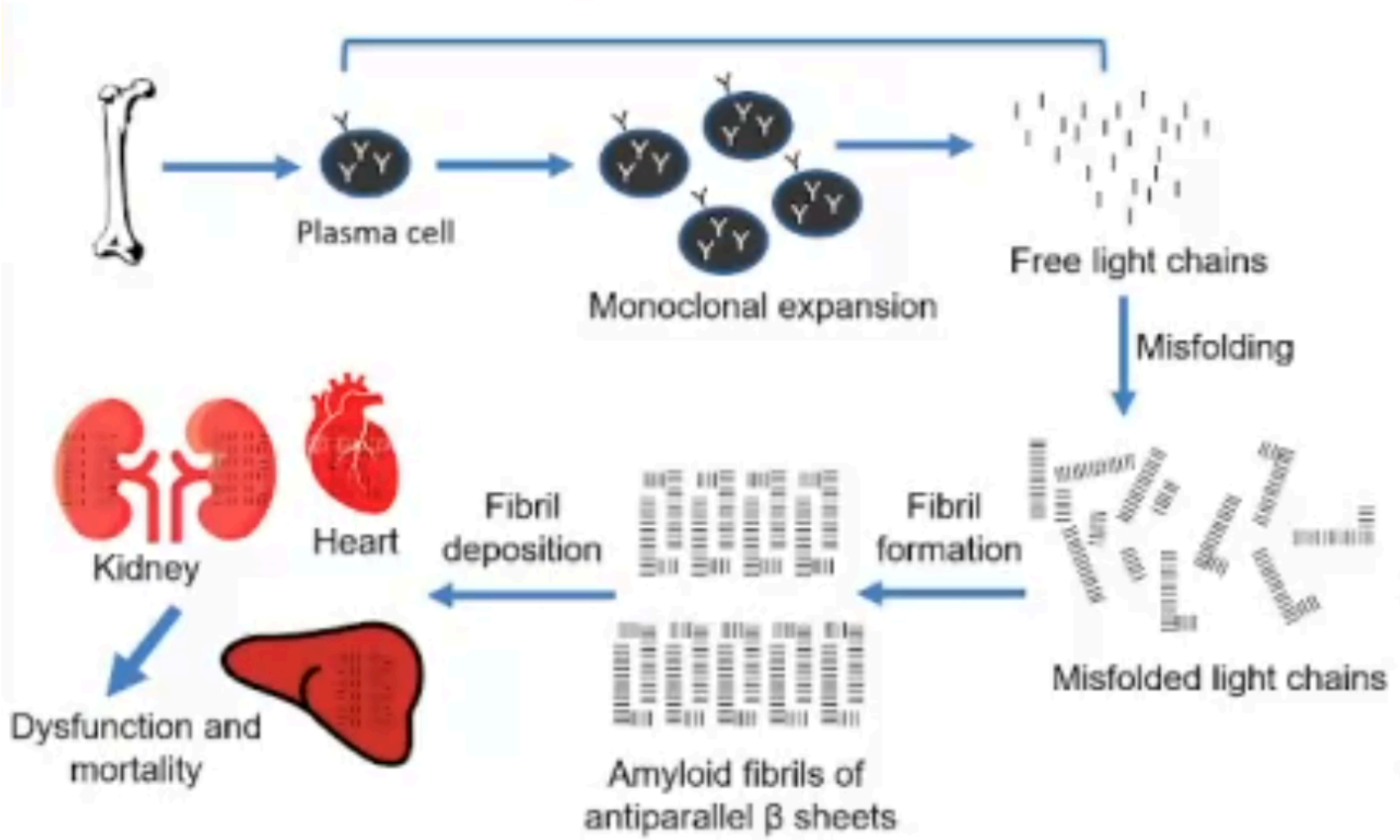
Serumspezifische Bestandteile: SAP Serum Amyloid P

- Ist eine **Serum-Protein**, das in jedem Lebewesen vorkommt
- SAP **schützt das Amyloid vor Körper eigenen Abbau-Mechanismen**

SAP

- **sind in allen Amyloidosen vorhanden**
- **und haben immer den gleichen Aufbau und Gestalt**

AL amyloidosis



AL, amyloid light chain; PCD, plasma cell dyscrasia; SoC, standard of care.

Warum entsteht eine Amyloidose

Amyloidose ist eine

Störung der Eiweiß / Protein Herstellung

- Normale Proteine sind im Blut löslich
- Amyloidose: falscher Aufbau und falsche der Form
- nicht mehr löslich und lagern sich im Gewebe und Organen ab
- Störung der Organ-Architektur
- Störung der Organ-Funktion
- Tod

Dobson CM, Nature 2002

36 Amyloid-bildende Proteine

Amyloid. 2016;23:209-213

Table 1. Amyloid fibril proteins and their precursors in human[a].

Fibril protein	Precursor protein	Systemic and/or localized	Acquired or hereditary	Target organs
AL	Immunoglobulin Light Chain	S, L	A, H	All organs except CNS
AH	Immunoglobulin Heavy Chain	S, L	A	All organs except CNS
AA	(Apo) Serum Amyloid A	S	A	All organs except CNS
ATTR	Transthyretin, wild type	S	A	Heart mainly in males, Ligaments, Tenosynovium
	Transthyretin, variants	S	H	PNS, ANS, heart, eye, leptomen.
Aβ2M	β2-Microglobulin, wild type	L	A	Musculoskeletal System
	β2-Microglobulin, variant	S	H	ANS
AApoAI	Apolipoprotein A I, variants	S	H	Heart, liver, kidney, PNS, testis, larynx (C terminal variants), skin (C terminal variants)
AApoAII	Apolipoprotein A II, variants	S	H	Kidney
AApoAIV	Apolipoprotein A IV, wild type	S	A	Kidney medulla and systemic
AGel	Gelsolin, variants	S	H	PNS, cornea
ALys	Lysozyme, variants	S	H	Kidney
ALECT2	Leukocyte Chemotactic Factor-2	S	A	Kidney, primarily
AFib	Fibrinogen α, variants	S	H	Kidney, primarily
ACys	Cystatin C, variants	S	H	PNS, skin
ABri	ABriPP, variants	S	H	CNS
ADan*	ADanPP, variants	L	H	CNS
Aβ	Aβ protein precursor, wild type	L	A	CNS
	Aβ protein precursor, variant	L	H	CNS
APrP	Prion protein, wild type	L	A	CJD, Fatal insomnia
	Prion protein variants	L	H	CJD, GSS syndrome, Fatal insomnia
ACal	(Pro)calcitonin	L	A	C-cell thyroid tumors
AIAPP	Islet Amyloid Polypeptide†	L	A	Islets of Langerhans, Insulinomas
AANF	Atrial Natriuretic Factor	L	A	Cardiac atria
APro	Prolactin	L	A	Pituitary prolactinomas, aging pituitary
AIns	Insulin	L	A	Iatrogenic, local injection
ASPC‡	Lung Surfactant Protein	L	A	Lung
AGal7	Galectin 7	L	A	Skin
ACor	Corneodesmosin	L	A	Cornified epithelia, Hair follicles
AMed	Lactadherin	L	A	Senile aortic, Media
Aker	Kerato-epithelin	L	A	Cornea, hereditary
ALac	Lactoferrin	L	A	Cornea
AOAAP	Odontogenic Ameloblast-Associated Protein	L	A	Odontogenic tumors
ASem1	Semenogelin 1	L	A	Vesicula seminalis
AEnf	Enfurvitide	L	A	Iatrogenic

[a]Proteins are listed, when possible, according to relationship. Thus, apolipoproteins are grouped together, as are polypeptide hormones.
*ADan is the product of the same gene as ABri.
†Also called amylin.
‡Not proven by amino acid sequence analysis.

- > 280 identified precursors

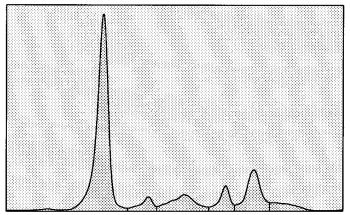
Sipe DJ, et al.Amyloid. 2016;23:209-213

AL-Amyloidosis Leichtketten-Amyloidose

- Es muß ein **Paraprotein/M-Protein/Freie Leichtketten** vorliegen
- Es muß eine **Plasma-Zell** oder B-Zell Erkrankung vorhanden sein

CAVE:
Jedes MGUS kann Amyloidose machen

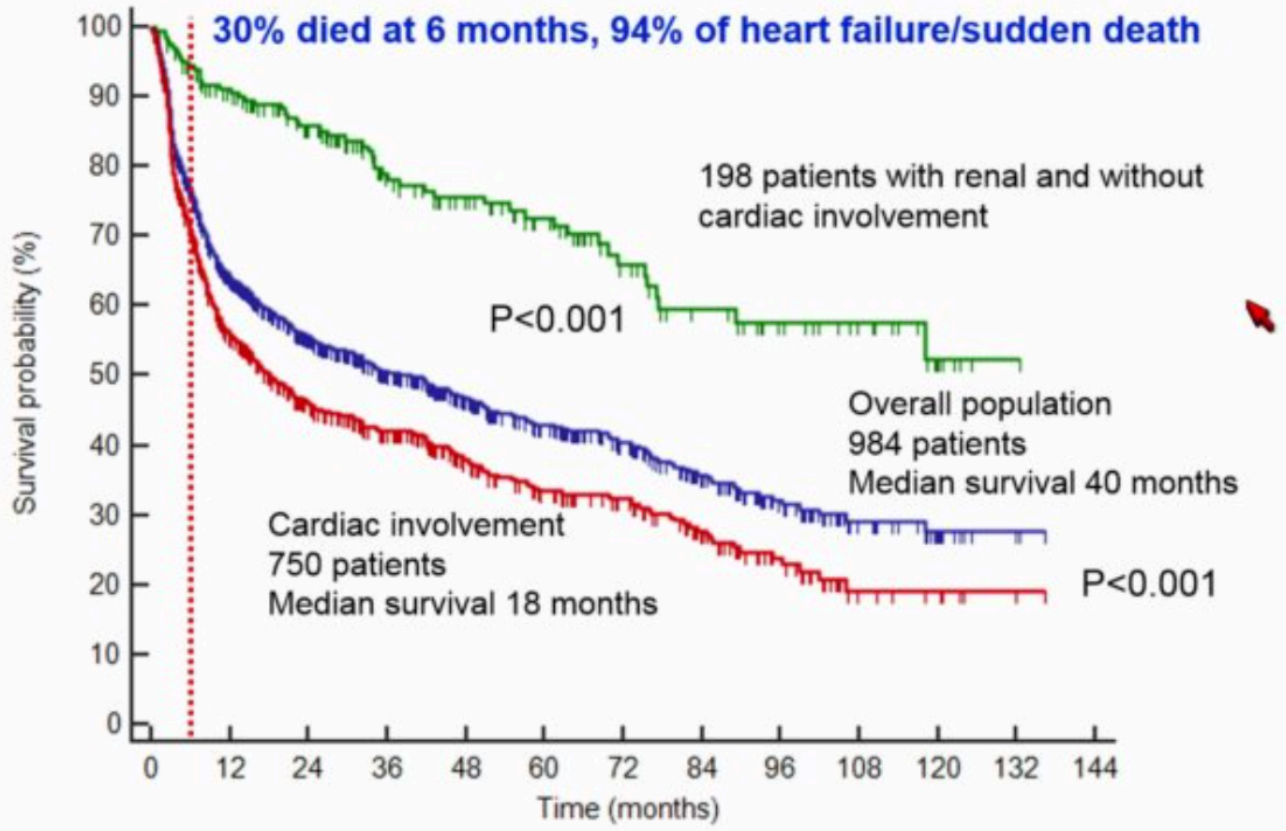
- Häufigste Amyloidose weltweit
- 8-15 neue/Jahr/1.000.000 Einwohner



Bande im Betabereich				
> Immun-Fixation		s. Bef. v. 20.08.2012 (IgA-Kappa)		
TUMORMARKER				
Beta 2-Microglobulin	↑	2.94	1.09 - 2.53	mg/l

30% der Pats sterben innerhalb von 6 Monaten nach Diagnose

Todesursache: Herzversagen



With great courtesy to Prof. G. Merlini, ASH 2017

Wirksame Therapien - sehr gefragt

Wirksame Therapien - sehr gefragt

1. Medikamenten-Gruppe:

- Reduktion der Leichtketten-Produktion

In naher Zukunft

2. Medikamenten-Gruppe

- Ablagerungen auflösen

Bis Ende 2020: KEINE zugelassene Therapie
Bortezomib / Velcade basierte Therapien

- **Bortezomib, cyclophosphamide & dexamethasone (VCd)** — Venner *Blood* 2012. Mikhael *Blood* 2012. Palladini *Blood* 2015.
  - Stem cell sparing, preferred in renal compromise
  - Largest retrospective series (N= 230), heme ORR 60%, CR 23%
  - Organ response suboptimal and often delayed, poor outcome in t(11;14)

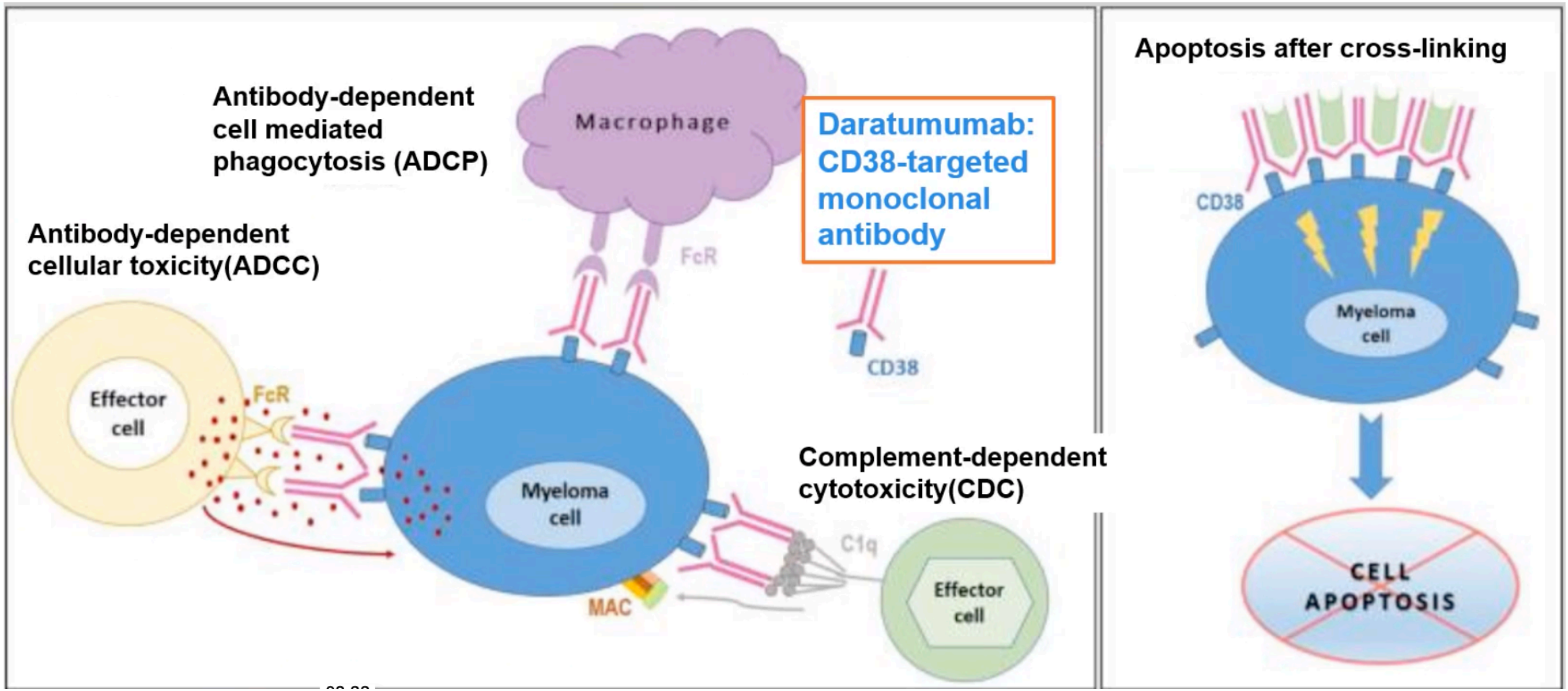
- **Bortezomib, melphalan & dexamethasone (BMDex)** — Kastritis *JCO* 2020.
  - Prospective RCT BMDex (N=53) vs Mdex (N=56)
  - Prolonged PFS and OS, 50% reduction in mortality; BMDex ORR 81%, CR 23%
  - Cardiac and renal responses in 38% and 44%, respectively
  - Overcome poor outcome in t(11;14)

- **Bortezomib-based induction prior to high dose melphalan** — Cornell *JCO* 2020.
  - Lower relapse and improved PFS in 246 pts receiving induction vs 140 pt no induction

- **Ixazomib: TOURMALINE AL1 favorable results**

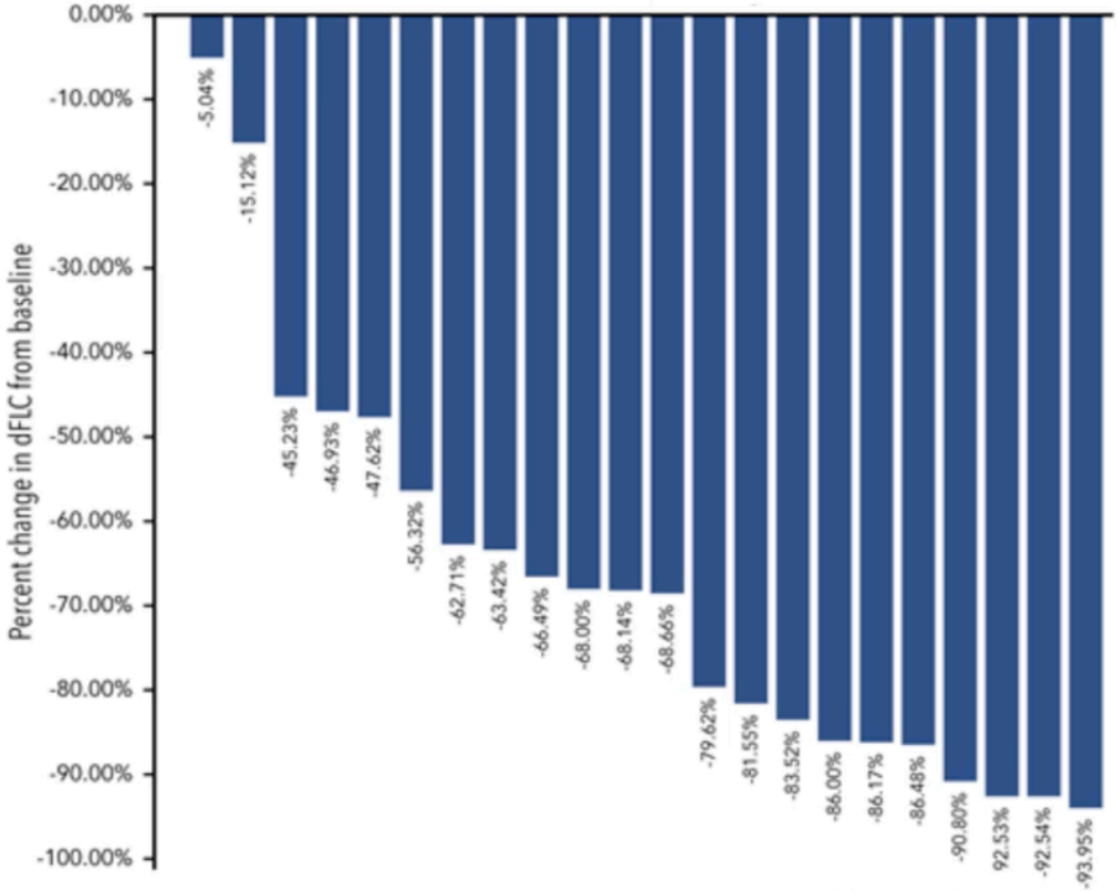
Daratumumab: CD38 targeted monoclonal antibody

Approved for treatment of multiple myeloma in 2015

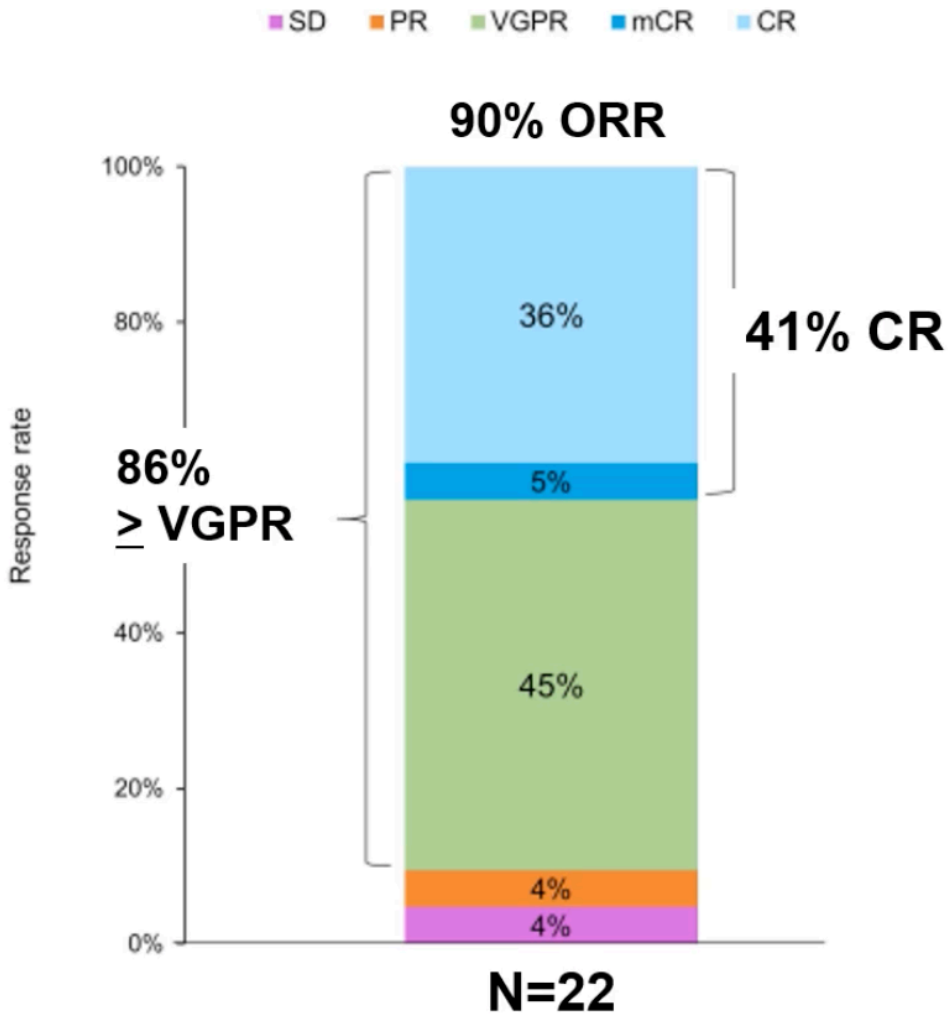


Phase II study of daratumumab in relapsed AL

Hematologic response after *one dose* of daratumumab



Enrolled patients (N=22)



ANDROMEDA: A randomised, open-label, active-controlled, phase 3 study of

D-VCd versus VCd alone in patients with newly diagnosed AL amyloidosis

SUBCUTANEOUS DARATUMUMAB ± BORTEZOMIB, CYCLOPHOSPHAMIDE, AND DEXAMETHASONE IN PATIENTS WITH NEWLY DIAGNOSED LIGHT CHAIN AMYLOIDOSIS: UPDATED RESULTS FROM THE PHASE 3 ANDROMEDA STUDY

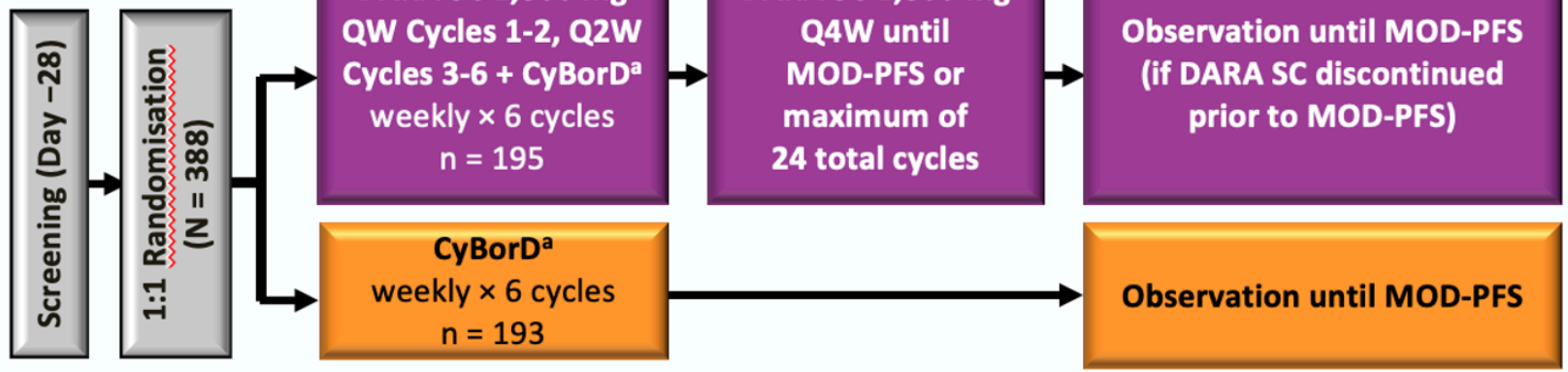
Efstathios Kastritis[1,*], Vaishali Sanchorawala[2], Giovanni Palladini[3], Monique Minnema[4], Ashutosh Wechalekar[5], Arnaud Jaccard[6], Angela Dispenzieri[7], Hans Lee[8], Divaya Bhutani[9], Simon Gibbs[10], Peter Mollee[11], Christopher Venner[12], Jin Lu[13], Stefan Schönland[14], Moshe Gatt[15], Kenshi Suzuki[16], Kihyun Kim[17], Teresa Cibeira[18], Meral Beksac[19], Edward Libby[20], Jason Valent[21], Vania Hungria[22], Sandy Wong[23], Michael Rosenzweig[24], Naresh Bumma[25], Dominique Chauveau[26], NamPhuong Tran[27], Xiang Qin[28], Sandra Vasey[28], Brenda Tromp[29], Brendan Weiss[28], Jessica Vermeulen[29], Raymond Comenzo[30], Giampaolo Merlini[3]

Newly Diagnosed AL 1st Line Treatment Phase III

Study Design

Key eligibility criteria:

- AL amyloidosis with ≥1 organ impacted
- No prior therapy for AL amyloidosis or MM
- Cardiac stage I-IIIA (Mayo 2004)
- eGFR ≥20 mL/min



Stratification criteria:

- Cardiac stage (I vs II vs IIIA)
- Transplant typically offered in local country (yes vs no)
- Creatinine clearance (≥60 mL/min vs <60 mL/min)

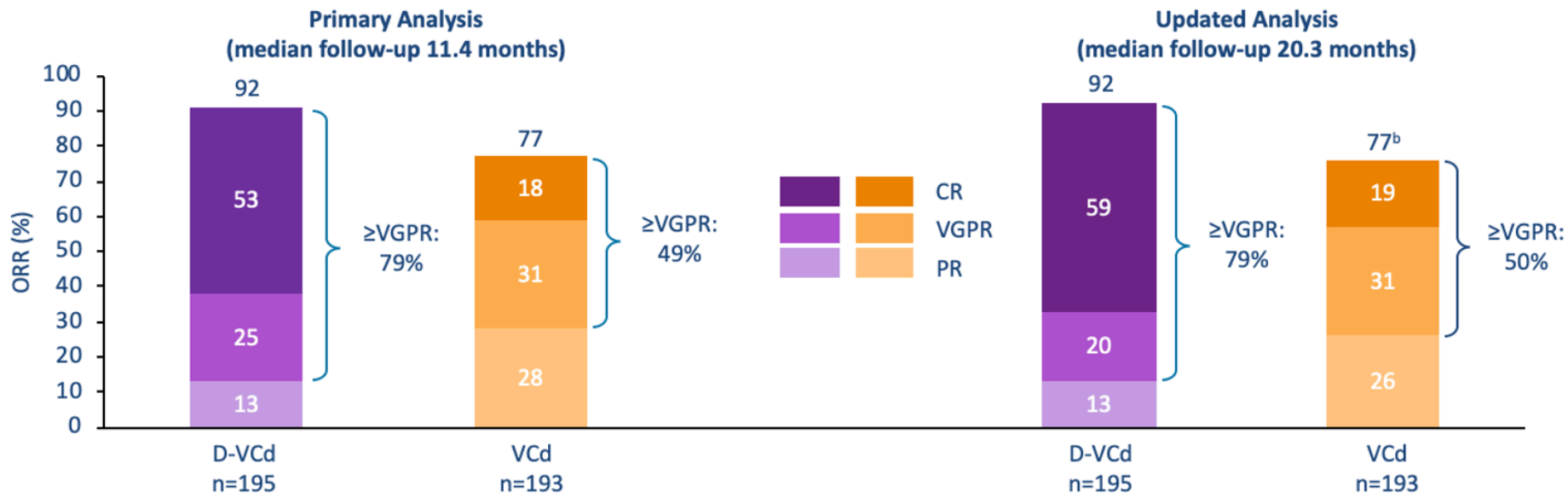
Primary endpoint: Overall haematologic CR rate

Secondary endpoints: MOD-PFS, organ response rate, time to haematologic response, overall survival, safety

ANDROMEDA is a randomised, open-label, active-controlled, phase 3 study of DARA SC plus CyBorD vs CyBorD alone in newly diagnosed AL amyloidosis

Haematologic Overall Response

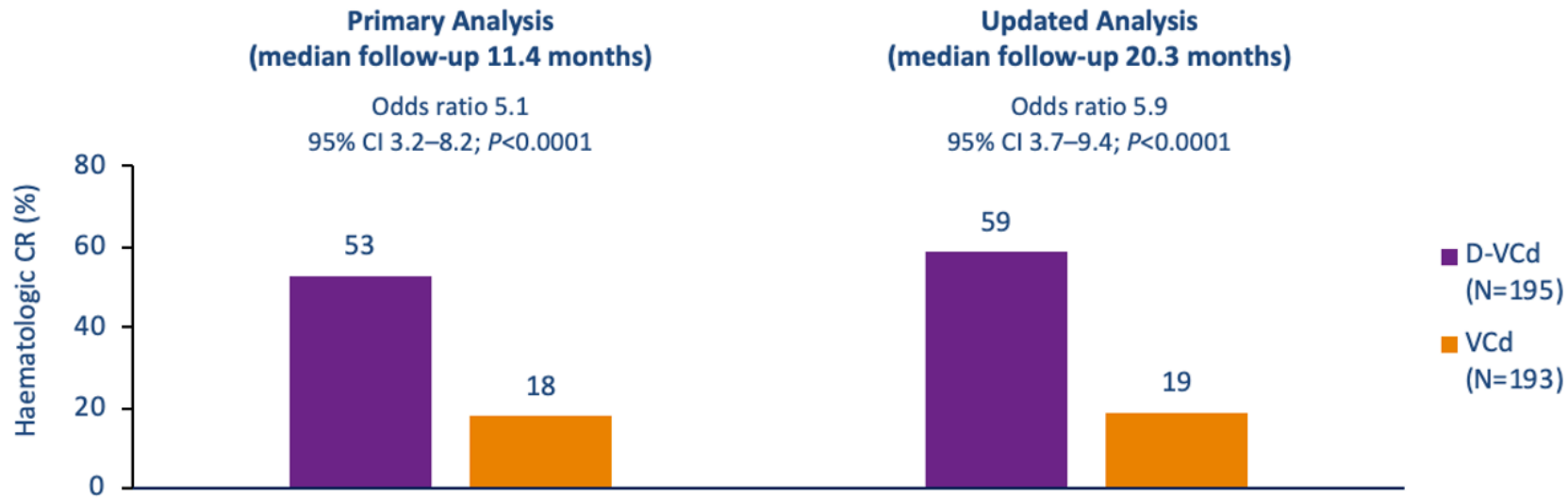
- Longer follow-up confirmed the significantly higher rate of haematologic overall response (92% vs 77%) and ≥VGPR (79% vs 50%) with D-VCd versus VCd
  - ≥VGPR: odds ratio 3.7, 95% CI 2.4–5.9, *P*<0.0001
  - Median time to ≥VGPR[a] was 0.56 months for D-VCd and 0.82 months for VCd



[a]Among ≥VGPR responders (D-VCd, n=154; VCd, n=97); [b]Numbers have been rounded.
CI, confidence interval; CR, complete response; D-VCd, daratumumab, bortezomib, cyclophosphamide, and dexamethasone; ORR, overall response rate; PR, partial response; VGPR, very good partial response; VCd, bortezomib, cyclophosphamide, and dexamethasone.

Haematologic CR: Primary Endpoint

- Haematologic CR was defined as normalisation of FLC levels and FLC ratio, and negative serum and urine immunofixation
  - If iFLC < upper limit of normal, normalisation of the uninvolved FLC and FLC ratio was not required
- Rates of haematologic CR remained significantly higher with D-VCd than VCd
- Median time to haematologic CR[a] was 2.0 months with D-VCd versus 2.8 months with VCd

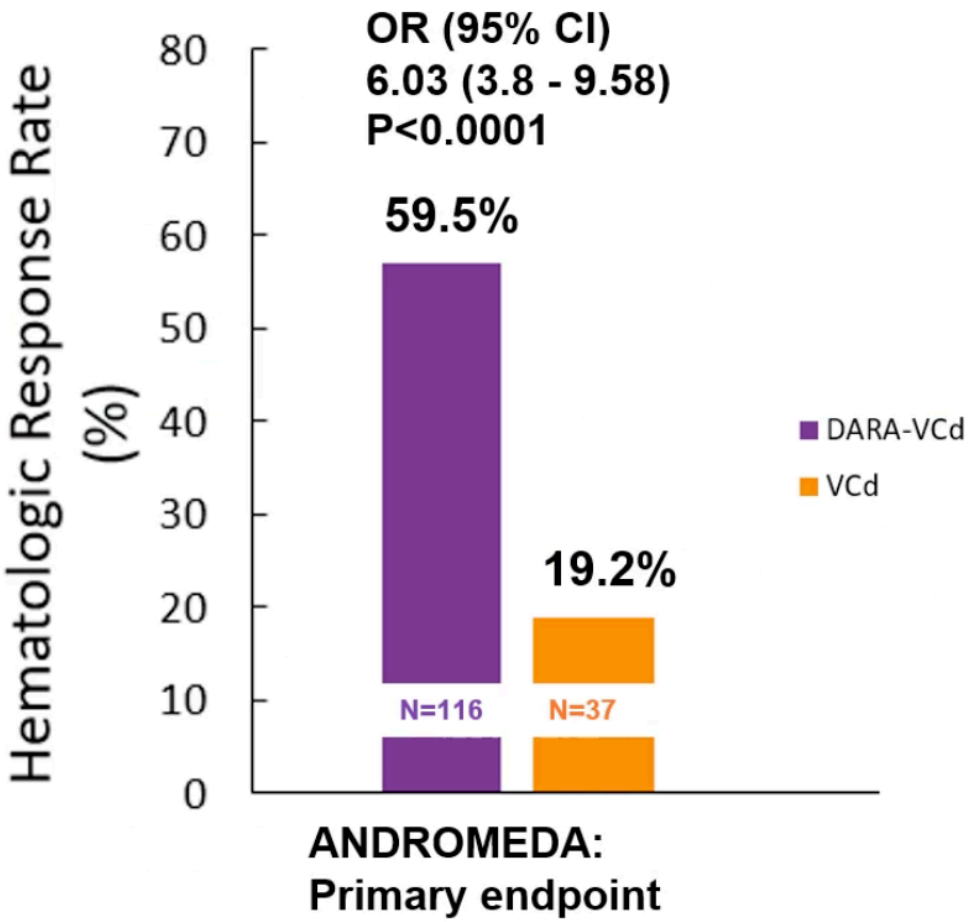


[a]Among CR responders (D-VCd, n=115; VCd, n=37).

CI, confidence interval; CR, complete response; D-VCd, daratumumab, bortezomib, cyclophosphamide, and dexamethasone; FLC, free light chain; iFLC, involved free light chain; VCd, bortezomib, cyclophosphamide, and dexamethasone.

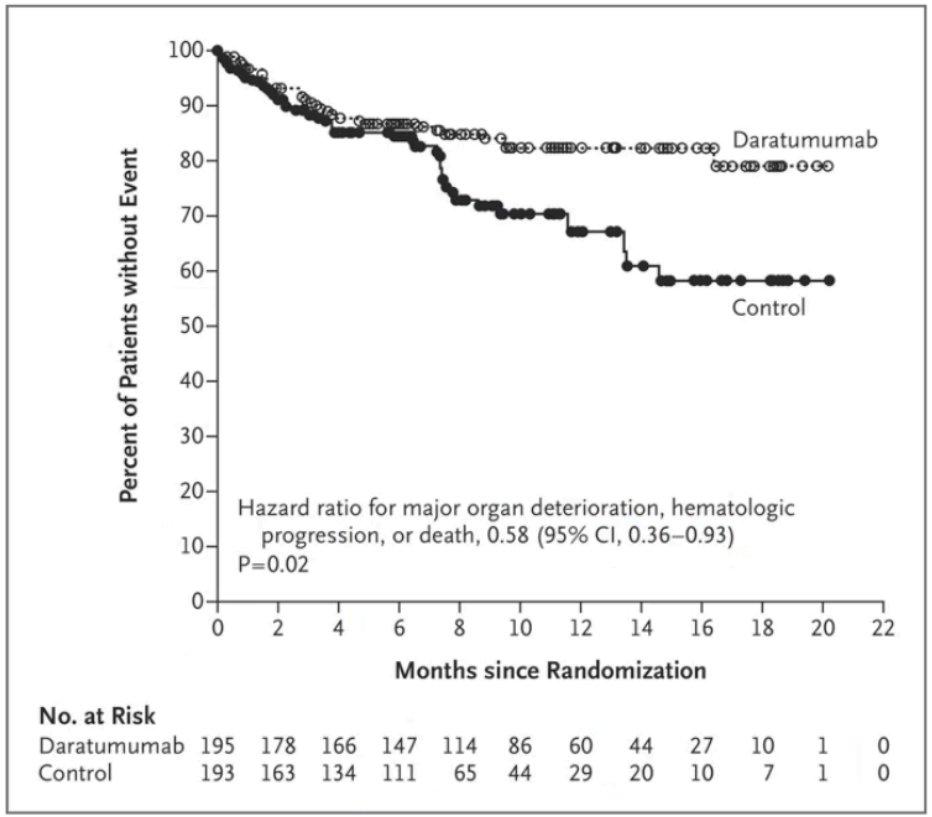
ANDROMEDA: Primary and secondary endpoints

Hematologic CR rate



ANDROMEDA: Primary endpoint

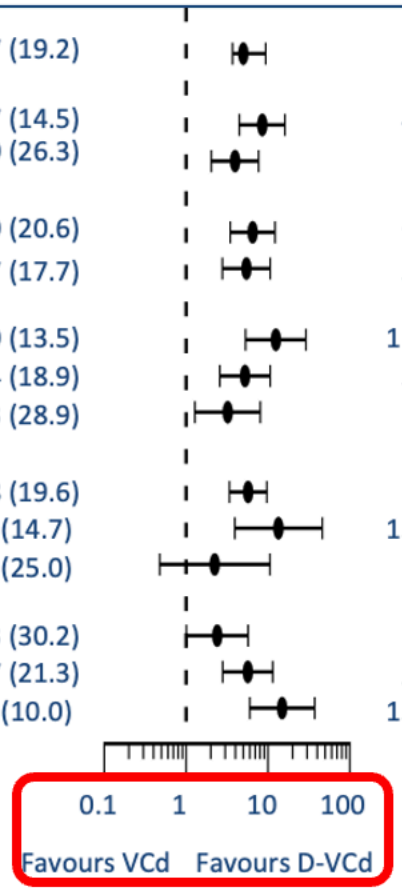
*Major organ deterioration (MOD)-PFS

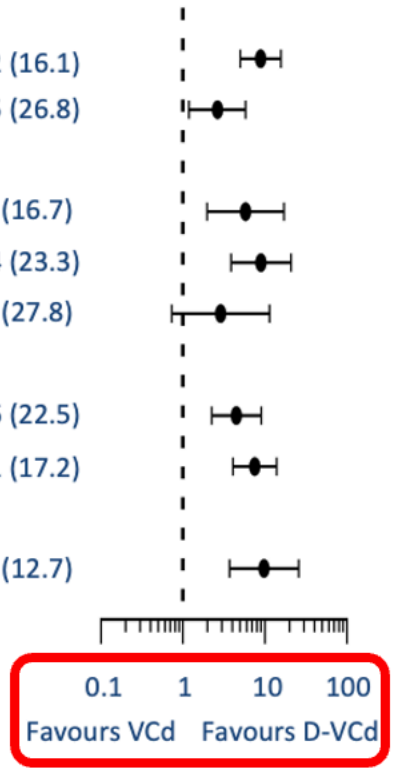


*MOD-PFS defined by: death, cardiac deterioration, ESRD, hematologic progression

Haematologic CR Rates Remained High Across All Prespecified Subgroups

Subgroup	D-VCd n (% resp)	VCd n (% resp)	Odds ratio (95% CI)
Overall	115 (59.0)	37 (19.2)	5.0 (3.7–9.4)
Sex			
Male	64 (59.3)	17 (14.5)	8.7 (4.5–16.3)
Female	51 (58.6)	20 (26.3)	4.0 (2.0–7.7)
Age			
<65 years	68 (63.0)	20 (20.6)	6.6 (3.5–12.3)
≥65 years	47 (54.0)	17 (17.7)	5.5 (2.8–10.7)
Baseline weight			
≤65 kg	41 (66.1)	10 (13.5)	12.5 (5.4–29.2)
>65–85 kg	53 (55.2)	14 (18.9)	5.3 (2.6–10.7)
>85 kg	21 (56.8)	13 (28.9)	3.2 (1.3–8.1)
Race			
White	88 (58.3)	28 (19.6)	5.7 (3.4–9.7)
Asian	21 (70.0)	5 (14.7)	13.5 (4.0–46.3)
Others	6 (42.9)	4 (25.0)	2.3 (0.5–10.6)
Baseline cardiac stage			
I	24 (51.1)	13 (30.2)	2.4 (1.0–5.7)
II	46 (60.5)	17 (21.3)	5.7 (2.8–11.5)
III[a]	45 (62.5)	7 (10.0)	15.0 (6.0–37.5)
Cardiac involvement at baseline			
Yes	88 (55.8)	22 (16.1)	8.9 (5.0–15.7)
No	27 (49.1)	15 (26.8)	2.6 (1.2–5.8)
Baseline renal stage			
I	21 (53.8)	6 (16.7)	5.8 (2.0–17.2)
II	41 (73.2)	14 (23.3)	9.0 (3.9–20.8)
III	10 (52.6)	5 (27.8)	2.9 (0.7–11.4)
Baseline ECOG performance score			
0	51 (56.7)	16 (22.5)	4.5 (2.2–9.0)
1 or 2	64 (61.0)	21 (17.2)	7.5 (4.1–13.9)
FISH t(11;14)			
Present	30 (58.8)	7 (12.7)	9.8 (3.7–25.8)





Safety: Most Common Any-Grade and Grade 3 or 4 TEAEs

- Median treatment duration:18.5 months (D-VCd) vs 5.3 months (VCd)
- From Cycle 7 onward in the D-VCd group (while patients received DARA monotherapy), any Grade 3 or 4 TEAEs occurred in <5% of patients

	D-VCd		VCd
Patients, %	Cycles 1–6 N=193	Cycle >6[a] N=149	Cycle 1–6 N=188
≥1 TEAE	97	91	98
Peripheral oedema	34	9	36
Diarrhoea	31	13	30
Constipation	33	9	29
Fatigue	26	7	28
Peripheral sensory neuropathy	28	13	20
Nausea	24	7	28
Insomnia	22	6	25
Upper respiratory tract infection	19	20	11

	D-VCd		VCd
Patients, %	Cycles 1–6 N=193	Cycle >6[a] N=149	Cycle 1–6 N=188
≥1 Grade 3 or 4 TEAE	56	26	57
Lymphopaenia	13	3	10
Pneumonia	6	3	8
Syncope	5	1	6
Diarrhoea	6	0	4
Cardiac failure[b]	5	2	3
Neutropaenia	5	1	3
Peripheral oedema	3	0	6
Hypokalaemia	2	1	5

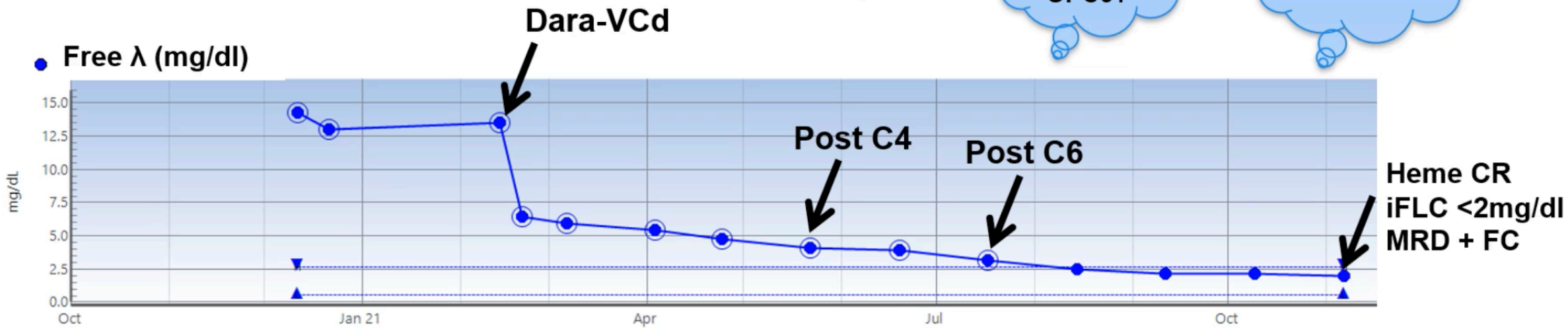
[a]From Cycle 7 onward, patients in the D-VCd group received DARA monotherapy; [b]Includes overall and congestive cardiac failure.
DARA, daratumumab; D-VCd, daratumumab, bortezomib, cyclophosphamide, and dexamethasone; TEAE, treatment-emergent adverse event; VCd, bortezomib, cyclophosphamide, and dexamethasone.

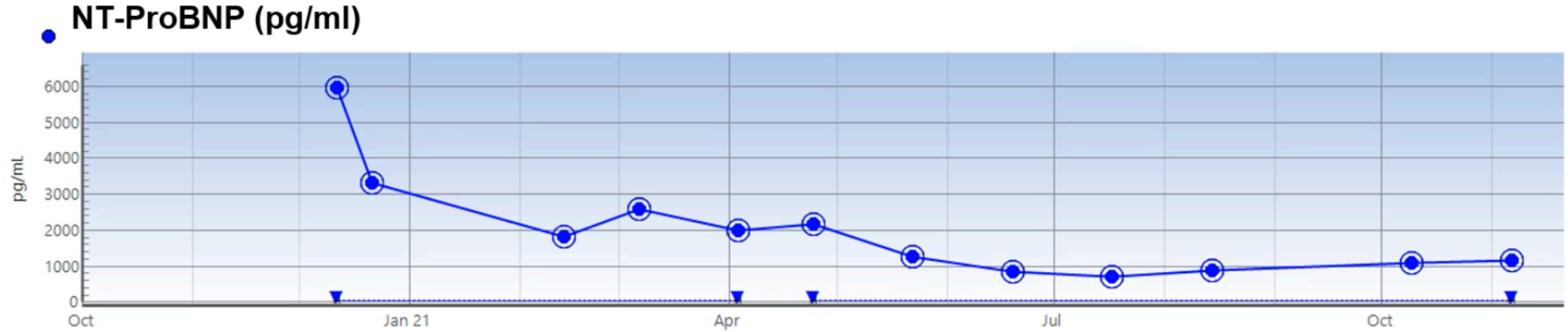
Mr. X started Dara-VCd

Feb 2021

< VGPR C1?
Or C2?
Or C3?

Consolidation ASCT?





Kastritis et al. *Amyloid* 2021

Palladini et al. Abst 153 Saturday 12:30pm

Allererste gesetzliche Zulassung einer Therapie für neu diagnostizierte AL Amyloidosen

DARZALEX *FASPRO*®
(daratumumab and hyaluronidase-fihj) Becomes the First FDA-Approved Treatment for Patients with Newly Diagnosed Light Chain (AL) Amyloidosis

15. Jänner 2021 FDA

Memorial Sloan Kettering Cancer Center

Allererste gesetzliche Zulassung einer Therapie für neu diagnostizierte AL Amyloidosen

DARZALEX *FASPRO*®
(daratumumab and hyaluronidase-fihj) Becomes the First FDA-Approved Treatment for Patients with Newly Diagnosed Light Chain (AL) Amyloidosis

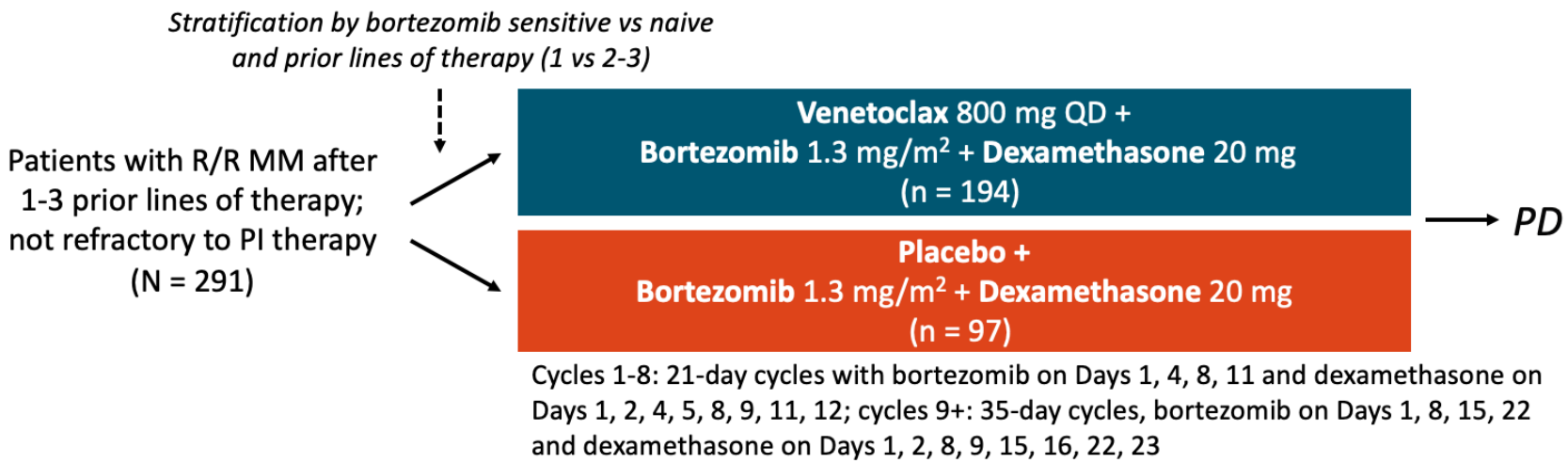
15. Jänner 2021 FDA

24. Juni 2021 EMA

Final Survival Analysis of BELLINI: Venetoclax or Placebo Plus Bortezomib/Dexamethasone in Relapsed/Refractory Multiple Myeloma

BELLINI Final Survival Analysis: Study Design

- Double-blind, randomized 2:1, placebo-controlled phase III trial

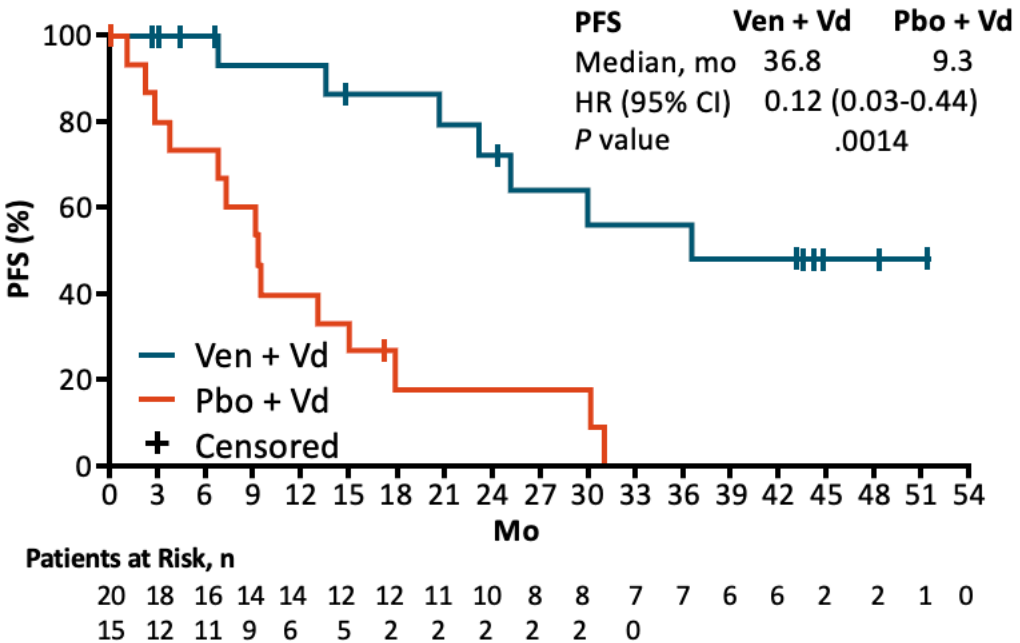


Cycles 1-8: 21-day cycles with bortezomib on Days 1, 4, 8, 11 and dexamethasone on Days 1, 2, 4, 5, 8, 9, 11, 12; cycles 9+: 35-day cycles, bortezomib on Days 1, 8, 15, 22 and dexamethasone on Days 1, 2, 8, 9, 15, 16, 22, 23

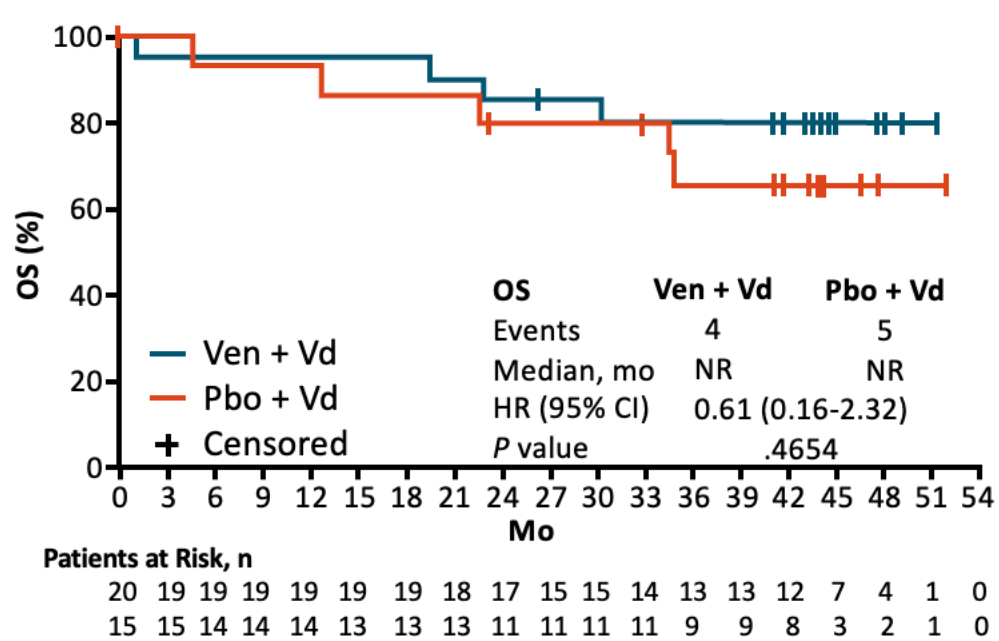
- **Primary endpoint:** PFS (per IRC)
- **Key secondary endpoints:** ORR, ≥VGPR, OS, QoL/PRO parameters (PFS was investigator-assessed in final OS analysis)

BELLINI Final Survival Analysis: PFS, OS in t(11;14) Subgroup

Investigator-Assessed PFS in Patients With t(11;14)



OS in Patients With t(11;14)

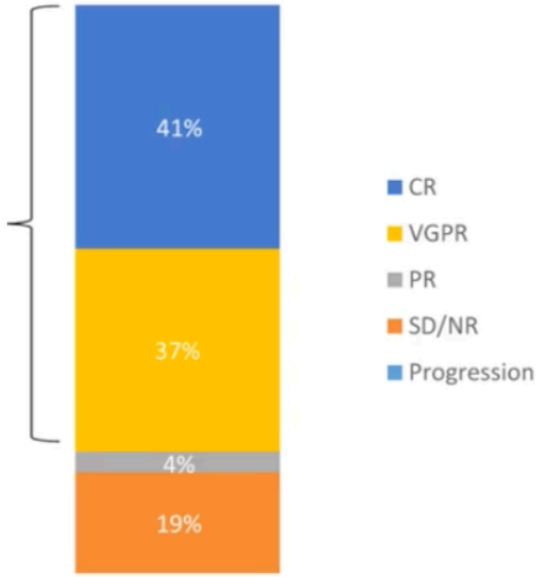


Established and emerging second line therapies

- **Translocation (11;14):** 50% of patients with AL
  - High BCL-2/MCL-1 & uniquely responsive to the BCL-2 inhibito **Venetoclax***

N =27

78% VGPR/CR



Premkumar *Blood Can J* 2021.

*Several studies planned

Direkte Reduktion der Amyloid-Ablagerungen

- **Anti Fibril moAB NEOD001 Vital Study (Prothena)**

  Prothena: phaseI/II and phase III

- **Anti Fibril MoAB 11-1F4 moAB** AL Langer, Suzanne Lentzsch (Columbia University)

  Results of Phase I Study of Chimeric Fibril-Reactive

  Monoclonal Antibody 11-1F4 in Pat with AL Amyloidosis,

  Columbia University NY, Abstr 188, ASH 2015

- **Anti SAP small molecule & Anti SAP moAB** London University College, NAC

  phase I/II published in NEJM 07/2015

Direkte Reduktion der Amyloid-Ablagerungen

- **Anti Fibril moAB NEOD001 Vital Study (Prothena)**

  Prothena: phaseI/II and phase III

  ⇦ **Abgebrochen 23. April 2018**

- **Anti Fibril MoAB 11-1F4 moAB** AL Langer, Suzanne Lentzsch (Columbia University)

  Results of Phase I Study of Chimeric Fibril-Reactive Monoclonal Antibody 11-1F4 in Pat with AL Amyloidosis, Columbia University NY, Abstr 188, ASH 2015

- **Anti SAP small molecule & Anti SAP moAB** London University College, NAC

  phase I/II published in NEJM 07/2015

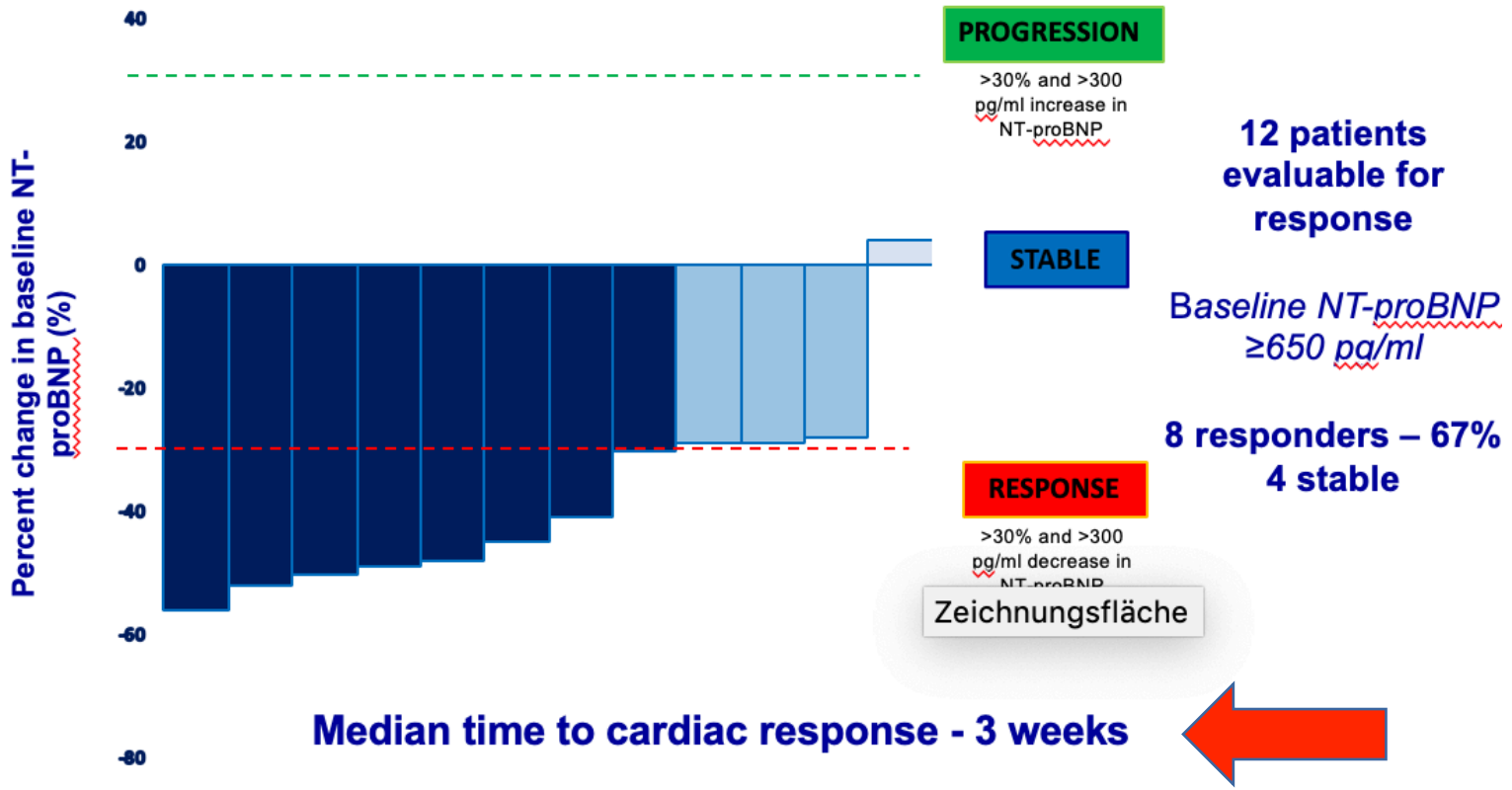
  ⇦ **Abgebrochen 2. April 2019**

Final Analysis of the Phase 1a/b Study of Fibril-Reactive Monoclonal Antibody 11-1F4 (CAEL-101) in Patients with AL Amyloidosis

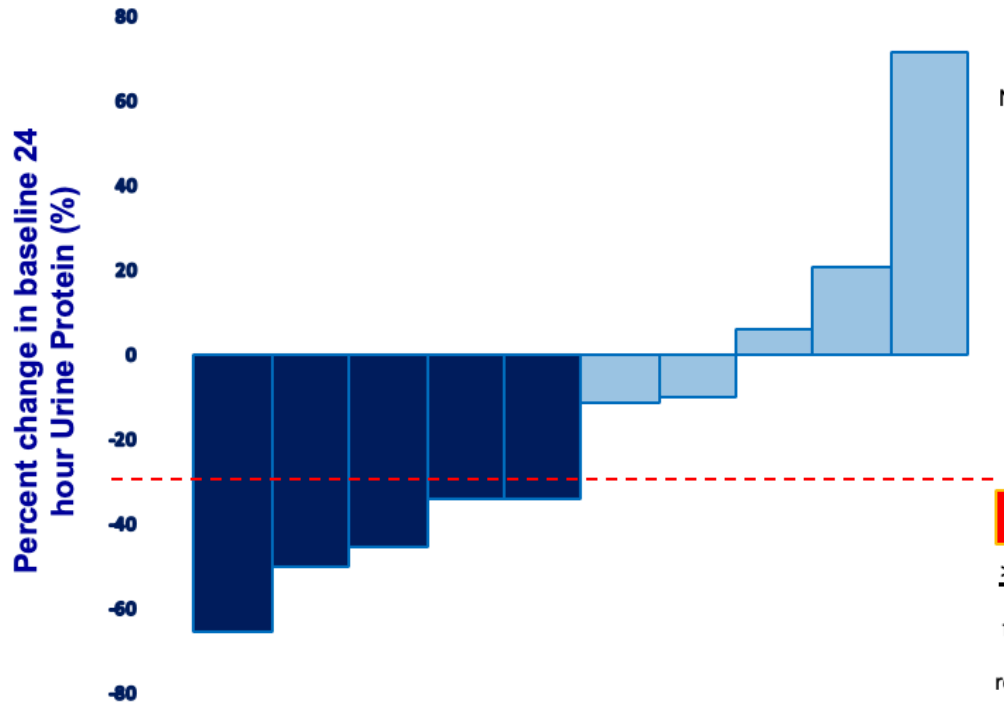
Camille V. Edwards[1], Julia Gould[2], Arielle L. Langer[5], Markus Mapara[2], Jai Radhakrishnan[3], Mathew S. Maurer[4], Shahzad Raza[6], John G. Mears[2], Siyang Leng[2], Jonathan Wall[7], Andrew Eisenberger[2], Alan Solomon[7] and Suzanne Lentzsch[2]

[1]Department of Hematology/Oncology, Boston Medical Center, Boston, MA
[2]Divisions of Hematology/Oncology, [3]Nephrology and [4]Cardiology, Columbia University Medical Center, New York, NY
[5]Division of Hematology/ Oncology, Icahn School of Medicine at Mount Sinai, New York, NY
[6]St. Luke's Cancer Institute/ University of Missouri, Kansas City, MO
[7]Graduate School of Medicine, University of Tennessee, Knoxville, TN

Best Cardiac Response After Treatment with 11-1F4 mAb (CAEL-101)



Best Renal Response After Treatment with 11-1F4 mAb (CAEL-101)



10 patients evaluable for response

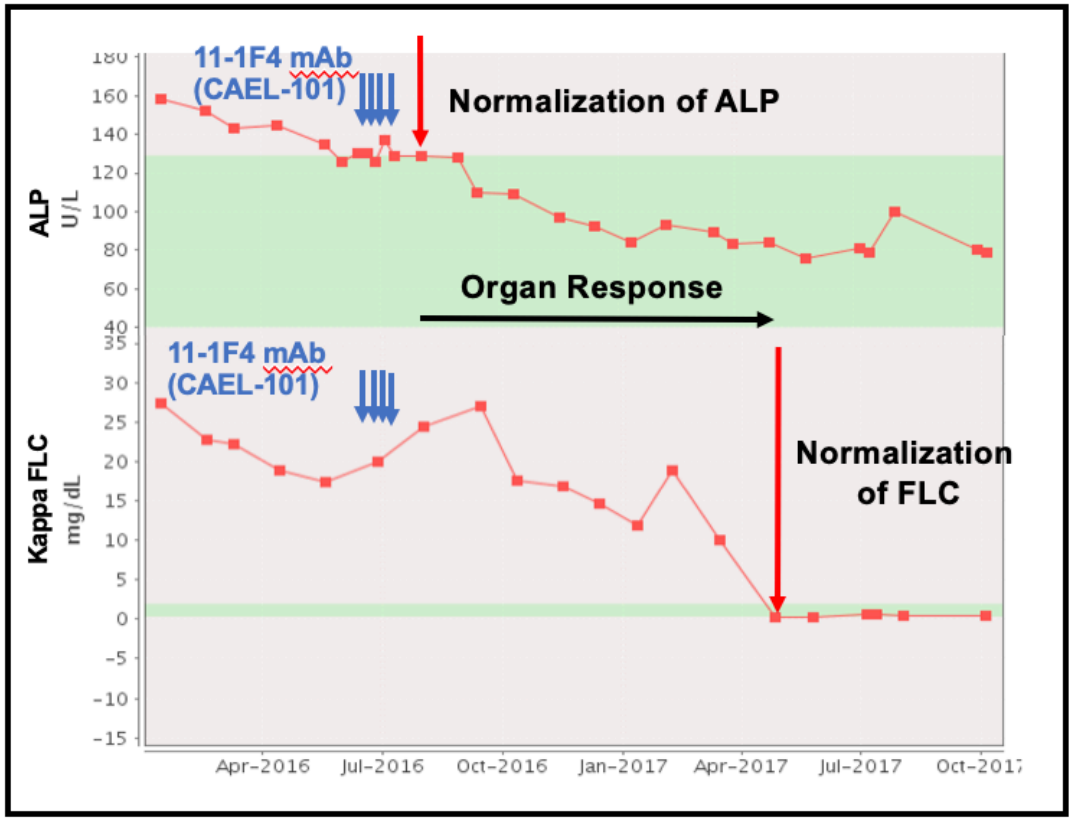
5 responders – 50%

5 stable

Median time to renal response – 4 weeks*

*24 hour urine protein measured at screening and Week 8 in Phase 1a and at screening and Weeks 5, 8 and 12 in Phase 1b

Organ Response Occurs Independent of FLC Response



Patient with Liver AL Amyloidosis (Kappa) had organ response 8 months before FLC - VGPR

US-Liver Pre-treatment

06-02-16: "**The liver is enlarged** with normal echogenicity. **The liver measures 19.4 cm** in length. Liver surface is smooth."

US-Liver Post-treatment

08-02-16: "**The liver is normal in size** and echogenicity. The surface is smooth. **Right lobe measures 17.3 cm** in length at the midclavicular"

American Society *of* Hematology

Helping hematologists conquer blood diseases worldwide

Place video here

Safety and Tolerability of CAEL-101 in Combination With Anti-Plasma Cell Dyscrasia Therapy in Patients With AL Amyloidosis: 1-year Results From an Open-label Phase 2 Trial

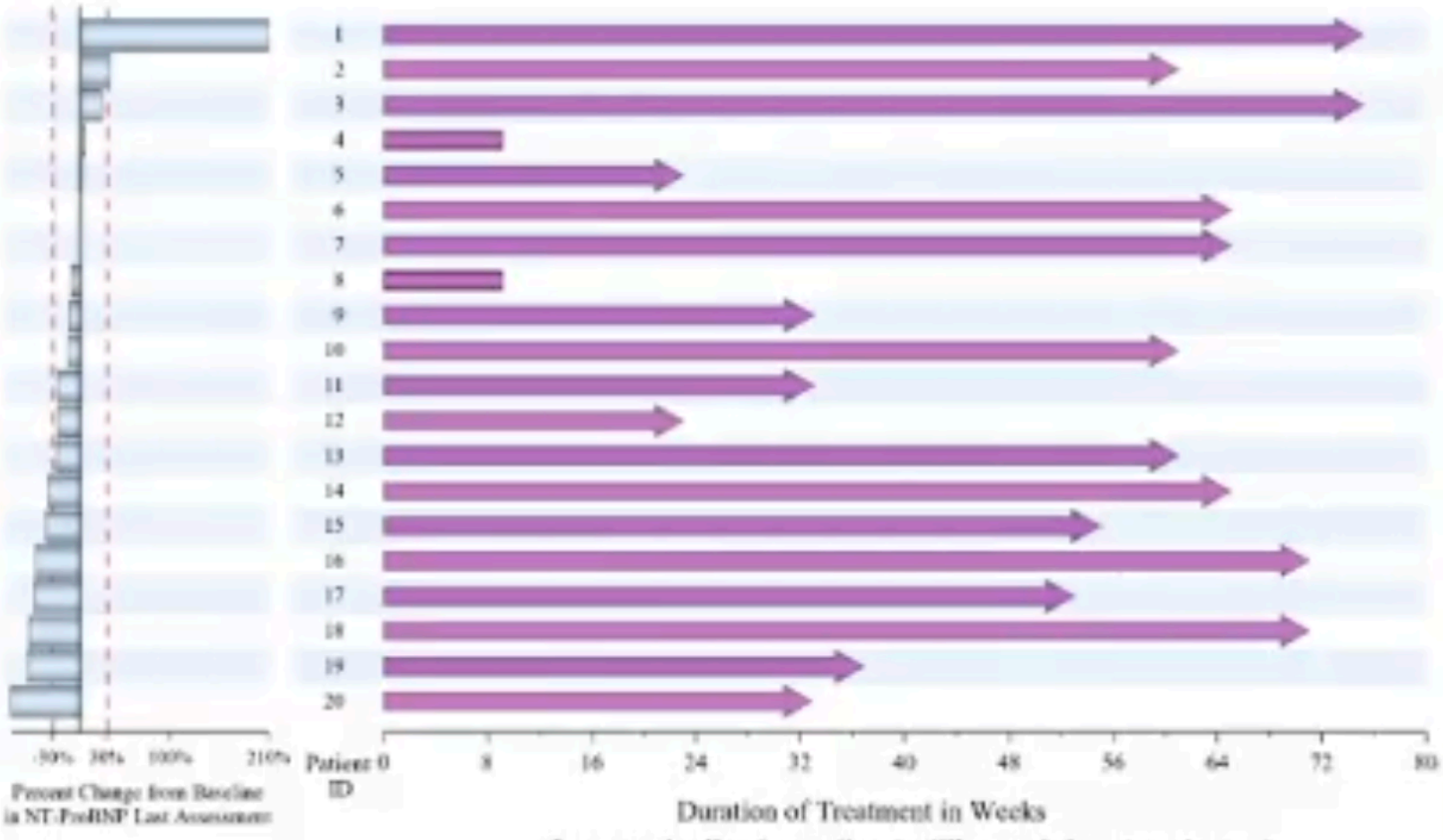
Jason Valent[1], Jeffrey Zonder[2], Michaela Liedtke[3], John Silowsky[4], Michael Kurman[5], Eileen Daniel[4], Janet Jobes[4], Mark Harnett[6], Jessica Raviwong[4], Michael Spector[4], Susan Sobolov[4]

[1]Taussig Cancer Institute, Cleveland Clinic, Cleveland, OH, USA; [2]Karmanos Cancer Center, Detroit, MI, USA; [3]Stanford University Medical Center, Palo Alto, CA, USA; [4]Caelum Biosciences (now part of Alexion, AstraZeneca Rare Disease), Bordentown, NJ, USA; [5]Michael Kurman Consulting, LLC, Wyckoff, NJ, USA; [6]Caelum Biosciences (now part of Alexion, AstraZeneca Rare Disease), Stow, MA, USA.

Cardiac response at a median of 1 year of treatment

- Overall, 18 out of 20 (90%) current cardiac evaluable patients showed improvement or were stable at the last evaluable timepoint[a]

Most recent response	CAEL-101 + SoC (N = 20)
Responder[b]	7 (35.0%)
Stable[c]	11 (55.0%)
Progressed	2 (10.0%)

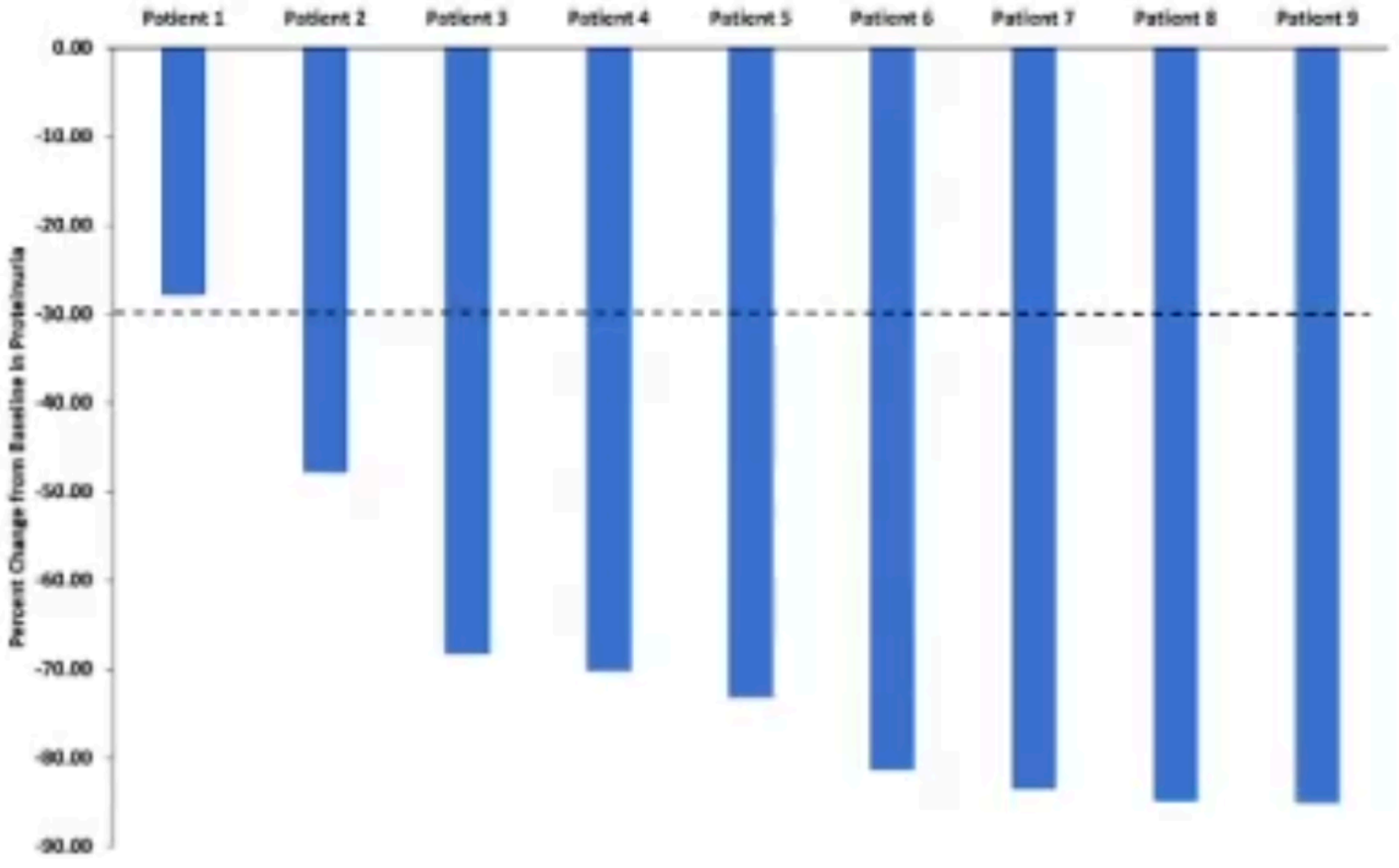


[a]Patients with baseline NT-proBNP ≥332 ng/L and ≥1 post-first-dose NT-proBNP value; [b]≥30% NT-proBNP decrease from baseline; [c]±30% change from baseline.

cTnT, cardiac troponin T; NT-proBNP, N-terminal pro-brain natriuretic peptide; SoC, standard of care.

Renal response at a median of 1 year of treatment

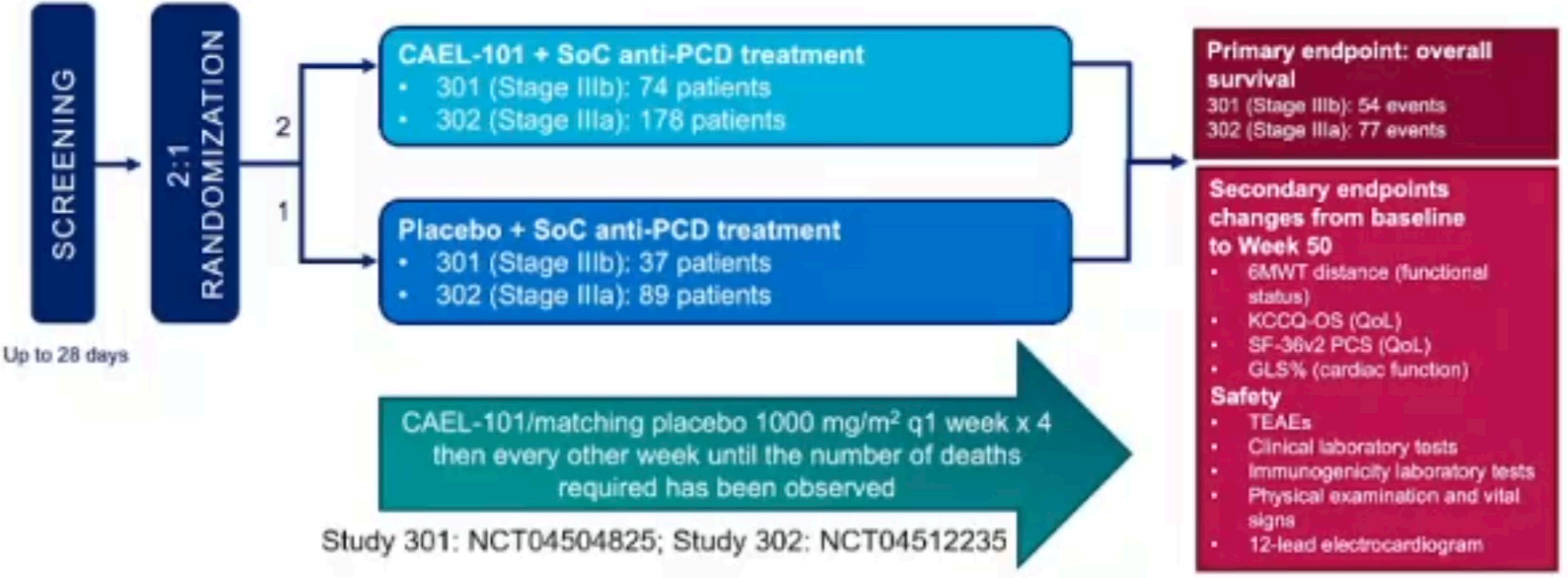
- Overall, 8 out of 9 patients with renal impairment at baseline showed a renal response (determined by investigator at a single site)
  - Renal response was defined as ≥30% decrease in proteinuria following treatment
- In 3 patients, proteinuria decreased to <0.5 g/24 h



Dotted line indicates renal response.

Caelum CARES phase 3 program is ongoing

- To further elucidate the efficacy and safety of CAEL-101 in patients in Mayo Stage IIIa/b AL amyloidosis



6MWT, 6-minute walk test; AL, amyloid light chain; GLS, global longitudinal strain; KCCQ-OS, Kansas City Cardiomyopathy Questionnaire – overall summary; PCD, plasma cell dyscrasia; PCS, physical component summary; QoL, quality of life; SF-36 v2 PCS, Short-Form 36 version 2 physical component summary; SoC, Standard of Care; TEAE, treatment-emergent adverse event.

Zusammenfassung

- Darzalex/Bortezomib/Cyclophodphamid/Dexa gibt es eine offiziell zugelassene Erstlinien-Therapie zur Behandlung von neu diagnostizierten AL
- t(11;14) ist ein vielversprechendes Target für Venetoclax

  in der Behandlung von AL
- CAEL 101 ein neuer Antikörper zum Abbau von bereits abgelagertem Amyloid
- Sehr erfolgversprechende neue Studie mit CAEL 101 + Standard of Care in MAYO IIIa/b