



Supplementary Materials

Supplementary Table S1. Eligibility Criteria.

Inclusion criteria	Exclusion criteria
CD30+ malignant lymphoma in 1 st or 2 nd remission or 2 nd chemo-sensitive relapse HDCT/ASCT planned	Relevant co-existing disease excluding a treatment according to protocol Patient not fit for ASCT
Age 18-65	Lack of patient cooperation to allow study treatment as outlined in this protocol.
Written informed consent	Pregnant or lactating female patients.
Negative pregnancy test within 14 days prior to registration (women of childbearing potential)	Concurrent malignant disease (except basalioma/spinalioma of the skin, early-stage cervix carcinoma, or early-stage prostate cancer)
Agreement to use effective contraception from registration until 12 months after completion of treatment	Previous treatment for other malignancies (not listed above) terminated at least 24 months before registration, with no evidence of active disease since then
Platelets $\geq 75 \times 10^9/L$ unless there is known marrow involvement of the disease	Major coagulopathy or bleeding disorder.
Absolute neutrophils $\geq 1,5 \times 10^9/L$, unless there is known hematologic/solid tumor marrow involvement	Major surgery less than 30 days before start of treatment.
Total bilirubin $< 1.5 \times ULN$ unless the elevation is known to be due to Gilbert syndrome.	Known history of any of the following cardiovascular conditions: - Myocardial infarction in the last 2 years - NYHA Class III or IV heart failure - Current uncontrolled cardiovascular conditions - Recent evidence (6 months before 1 st dose of study drug) of LVEF $< 50\%$
ALT or AST $< 3 \times ULN$ or AST and ALT $< 5 \times ULN$, if the malignancy involves the liver	Symptomatic neurologic disease compromising normal activities of daily living or requiring medications
Serum creatinine < 2.0 mg/dL and/or (calculated) creatinine clearance > 40 mL/min	Any sensory or motor peripheral neuropathy greater than or equal to grade 2
Hemoglobin ≥ 8 g/dL.	Patients that have not completed any prior treatment within at least 5 half-lives of last dose of that treatment Known hypersensitivity to any excipient contained in the drug formulation of Brentuximab Vedotin Acute uncontrolled infection

Supplementary Table S2. Engraftment times of patients undergoing BeEAM compared to BV-BeEAM.

Parameter	BV-BeEAM	Gilli et al.	Hahn et al.	Noesslinger et al.	Redondo et al.	Saleh et al.	Visani et al.
n	12	39	41	41	60	34	43
cHL	7	6	7	9	0	9	15
NHL	5	33	34	32	60	25	28
Age	56 (19-63)	60 (16-71)	NA ¹	52 (22-71)	55 (28-71)	49 (21–68)	47 (18-70)
Prior therapies	2 (1-3)	2 (1-5)	NA	2 (1-4)	NA	2 (1-3)	2 (2-5)
Tc >20 G/L	15 (10-28)	15 (11–46)	12.6 (7–19)	12 (7-110)	NA	NA	13 (8-39)
Tc >50 G/L	26 (16-86)	23 (12–205)	NA	17 (12-NA)	14 (4–53) ²	13 (7–19)	16 (11-51)
Tc >100 G/L	40 (5-NA)	35 (12–205)	NA	NA	NA	NA	NA
ANC >0.5 G/L	11 (8-17)	11 (9–13)	11.7 (9-15)	NA	11 (9–72) ²	9 (5–18)	10 (8-12)
ANC >1.0 G/L	12 (10-25)	NA	NA	10 (8-13)	NA	NA	NA

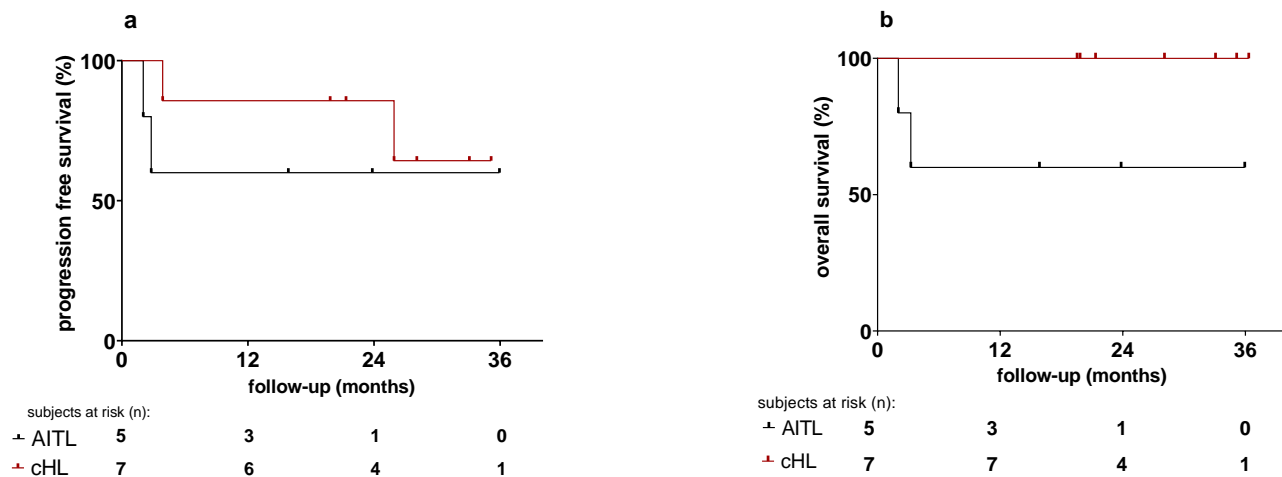
¹Mean 55, SD 12; ²excluding one patient (early death).

Supplementary Table S3. Toxicities of BeEAM compared to BV-BeEAM.

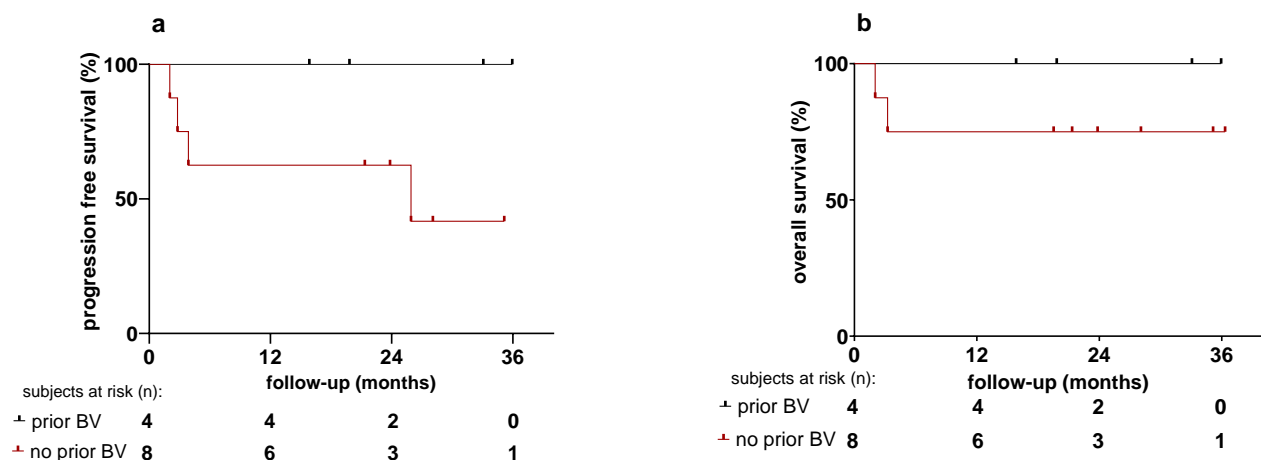
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Patients with at least one febrile episode ($>38.0^{\circ}\text{C}$), n (%)	12 (100%)	39 (100%)	41 (100%)	NA	46 (77%)	NA	25 (58%)
Febrile episodes ($>38.0^{\circ}\text{C}$), median (range)	2 (1-4)	NA	NA	NA	NA	NA	NA
Patients with at least 1 identified pathogen, n (%)	7 (58%)	31 (79%)	23 (56%)	9 (22%)	NA	9 (26)	3 (7%)
Patients with >1 identified pathogen, n (%)	1 (8%)	16 (41%)	NA	NA	NA	0 (0%)	0 (0%)
Bacteria, Gram-positive, n (%)	5 (42%)	18 (47%)	15 (NA)	NA	NA	6 (18%)	0 (0%)
Bacteria, Gram-negative, n (%)	3 (25%)	12 (30%)	8 (NA)	NA	NA	2 (6%)	0 (0%)
Viral, n (%)	0 (0%)	7 (18%)	6 (NA)	NA	NA	1 (3%)	2 (5%)
Fungal, n (%)	0 (0%)	2 (5%)	1 (NA)	NA	NA	0 (0%)	1 (2%)

¹ Common Toxicity Criteria for Adverse Events; ² Mean 55, SD 12; ³ not including febrile episodes grade 1.



Supplementary Figure S1. Kaplan Maier estimator of cumulative survival rates of 12 patients with CD30 positive lymphoma after HDCT with BV-BeEAM followed by ASCT, stratified by entity: (a) progression-free survival; (b) overall survival.



Supplementary Figure S2. Kaplan Meier estimator of cumulative survival rates of 12 patients with CD30 positive lymphoma after HDCT with BV-BeEAM followed by ASCT, stratified by prior exposure to BV: (a) progression-free survival; (b) overall survival.