Poster: # 1407

Overall survival according to body weight at treatment in CLL

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BACKGROUND

Our aim was to assess the impact of overweight and obesity on treatment outcomes for patients with CLL and to investigate whether body weight impacts the risk of adverse events.

Comorbidities associated with metabolic syndrome like type 2 diabetes mellitus and hypertension are highly prevalent in patients with CLL, and associated with inferior survival both following CLL diagnosis and and treatment.

METHODS

Cohort: Patients with CLL were identified in the Danish National Clinical Quality Database included in DALY-CARE: (*Brieghel et al., Clin epi, 2025*)

- **Registered with CLL (2008-2023)**
- **Received care in the Capital Region or the Zealand Region of Denmark**
- **Treated for CLL after May 2016**

Primary outcome — **Overall survival (OS) from first-line treatment (end of follow-up: Dec 2023)**

Secondary outcome — **Time from treatment to first adverse event**

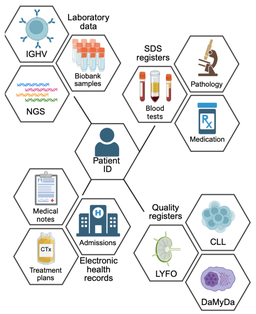

Figure 1: The DALY-CARE ressource holds data from multiple sources, linking patient information through a unique personal identification number

MAIN RESULTS

Body mass index (BMI)	median [IQR]	**24.8 [22.7-27.5]**
Underweight	<18.5 kg/m^2	**8 (2%)**
Normal weight	18.5-24.9 kg/m^2	**258 (52%)**
Overweight	25-29.9 kg/m^2	**165 (33%)**
Obese	≥30 kg/m^2	**68 (14%)**

- **566 patients was included.**
- **499 had BMI available**
- **Male: 70%**
- **Median age at treatment: 68 (IQR [61-75]) years**

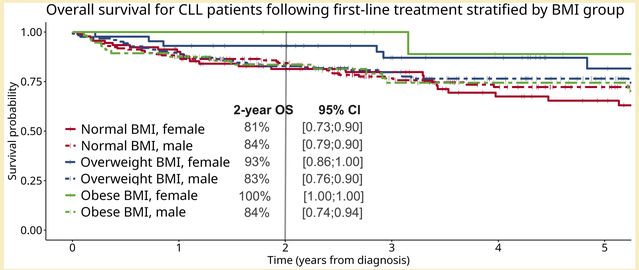

Figure 2: Kaplan–Meier OS after first-line CLL therapy, stratified by BMI group and biological sex. In univariable analysis, patients who were **overweight** at time of CLL treatment initiation had **longer OS** compared to normal-weight patients (**HR 0.66, 95% CI [0.43-0.99]**). OS was similar for obese and normal weight patients (**HR 0.73, 95%CI [0.42;1.27]**). **In multivariable analyses, no statisctically significant difference in OS** was seen when comparing overweight (**HR 0.76 [0.50-1.15]**) or obese (HR **1.00, 95%CI [0.17-1.77**) to normal weight patients. OS tended to be better for overweight **females** compared to females with normal weight (not statistically significant in multivariable anaysis, **HR 0.42 95% CI [0.42.0.17-1.07]**). Among **males**, OS did not differ by BMI.

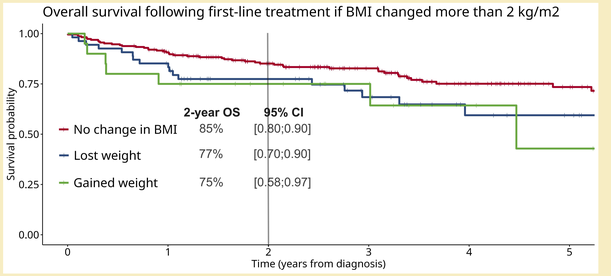

Figure 3: Kaplan–Meier OS after first-line CLL therapy, stratified by change in BMI. Compared to patients with no change in BMI (less than 2 kg/m^2 change), both **patients who lost weight and gained weight had shorter OS** in univariable analysis. In multivariable analysis, this was **statistically significant for patients who gained weight (HR 2.42, 95%CI [1.07-5.49]**).
Change in BMI was defined by loss or gain of weight corresponding to >2 kg/m^2 prior to treatment initiation. **Baseline BMI** was defined as last BMI registered in the electronic health record system >180 days prior to treatment initiation.

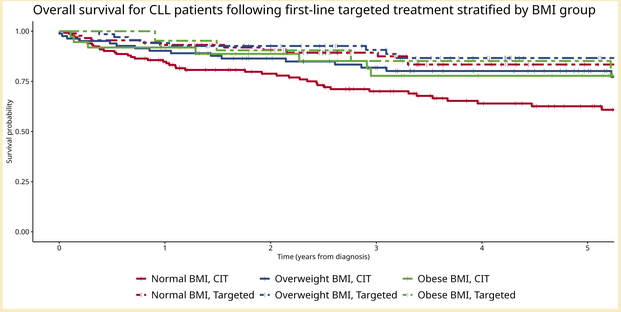

Figure 4: Kaplan-Meier OS after first-line CLL therapy, stratified by BMI group and treatment with either chemoimmunotherapy or targeted regimens. For patients treated with **targeted treatment**, survival did not differ by BMI. For patients treated with **CIT**, overweight patients has a statistically significant improved survival compared to normal weight (**HR 0.50, 95%CI [0.28-0.88]**)

Multivariable analyses: adjusted for age at treatment, treatment year and TP53 mutational/del(17p) status and either adjusted for or stratified by biological sex.

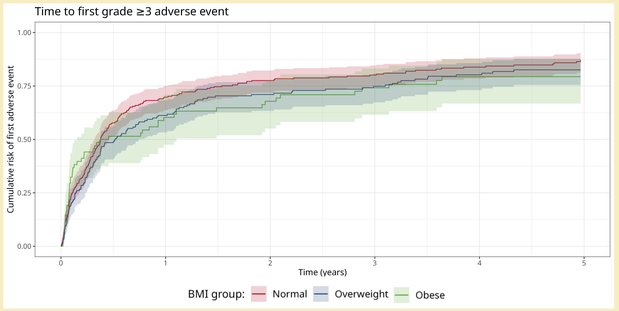

Figure 5: Cumulated incidence of time to first grade ≥3 adverse events.
Time to adverse event did not differ by BMI group (Gray's test). In multivariable cause-specific cox regression, HR for patients who were **overweight** was **0.91 (95%CI [0.73-1.12])** and **1.98 (95%CI [0.72-1.32])** for **obese** patients at treatment initiation.
Adverse events include: hospitalization, acute kidney injury (proxy: creatinine increase), anemia, thrombocytopenia, netropenia, and leukopenia as defined by Common Terminology Criteria for Adverse Events)

TAKE HOME MESSAGE

For patients with CLL receiving treatment, guidance should focus on maintaining a stable weight.

- **For those with a tendency to lose weight, this may include a high-protein, high-calorie diet.**
- **For those prone to weight gain, increased physical activity should be encouraged.**

The risk of adverse events did not differ with BMI.

Among patients receiving targeted therapy, survival was not affected by BMI.

FUTURE WORK

- **Comparison with external validation CLL cohort**
- **BMI as a continous covariate**
- **Detailing analyses on adverse events, including grade 2 infections**

ADDITIONAL INFORMATION

DISCLOSURES
This study was in part funded by AstraZeneca

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