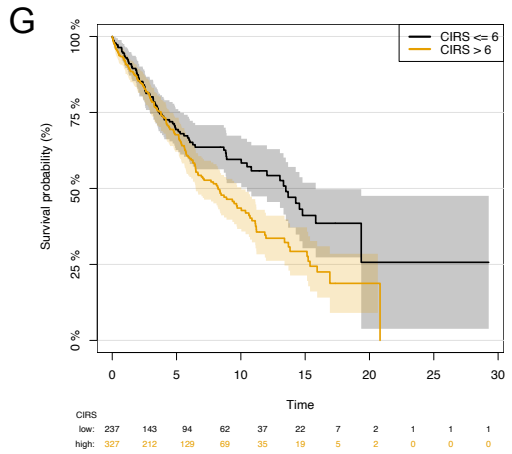
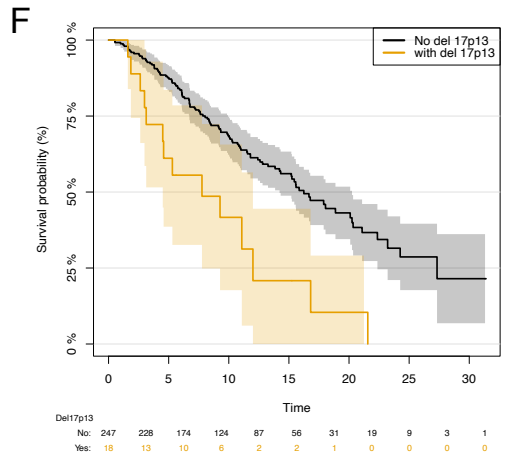
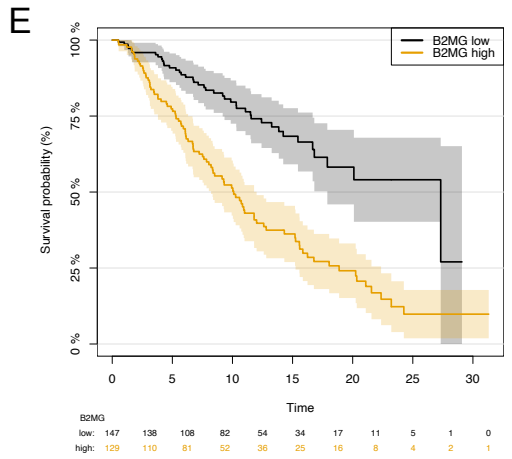
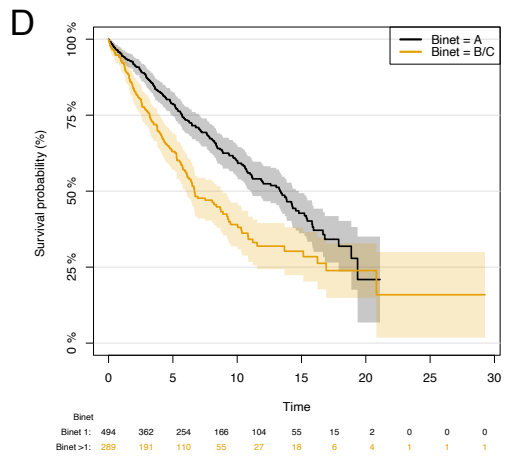
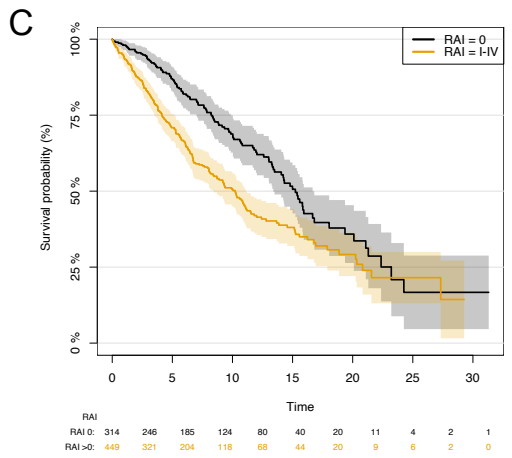
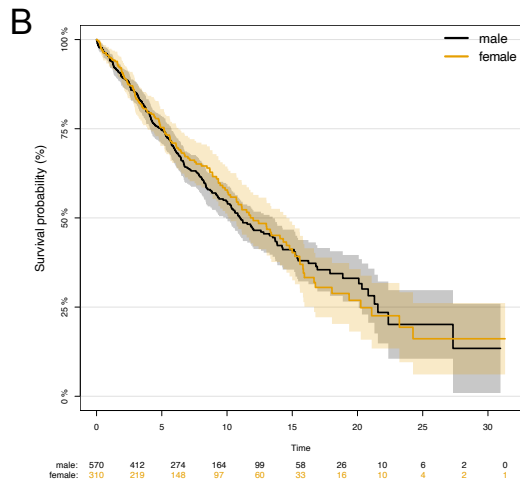
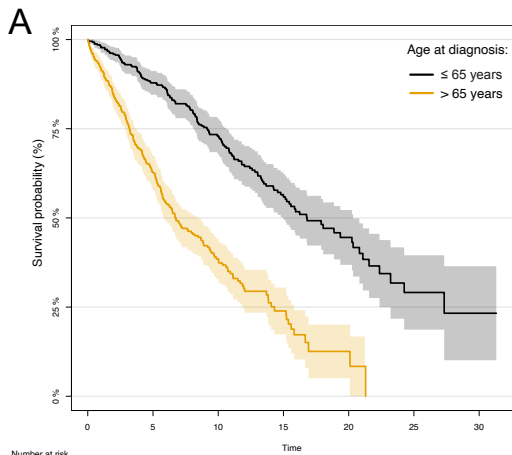
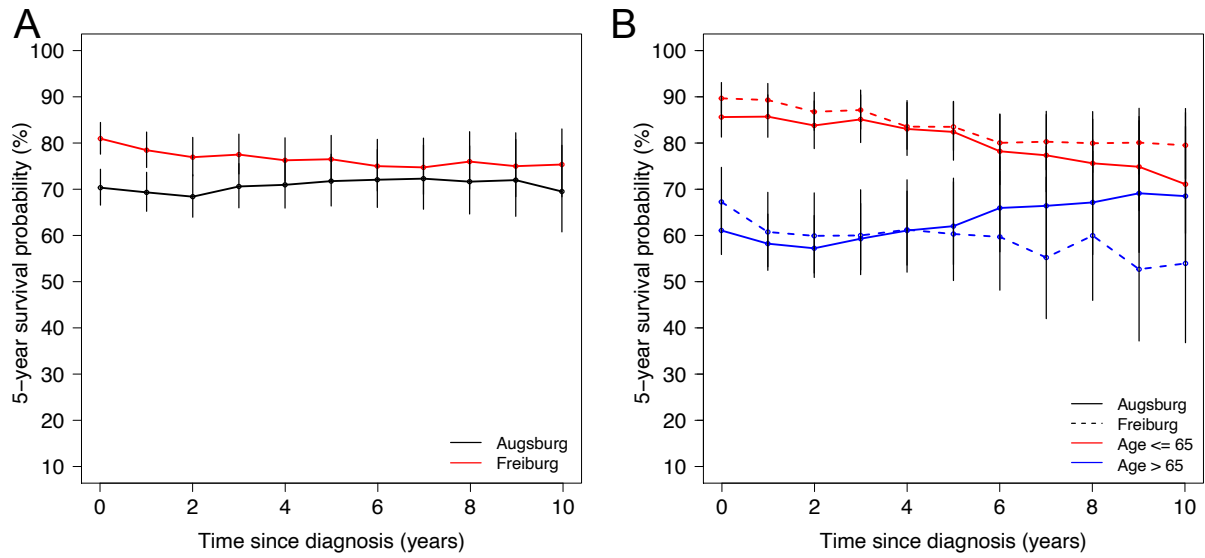


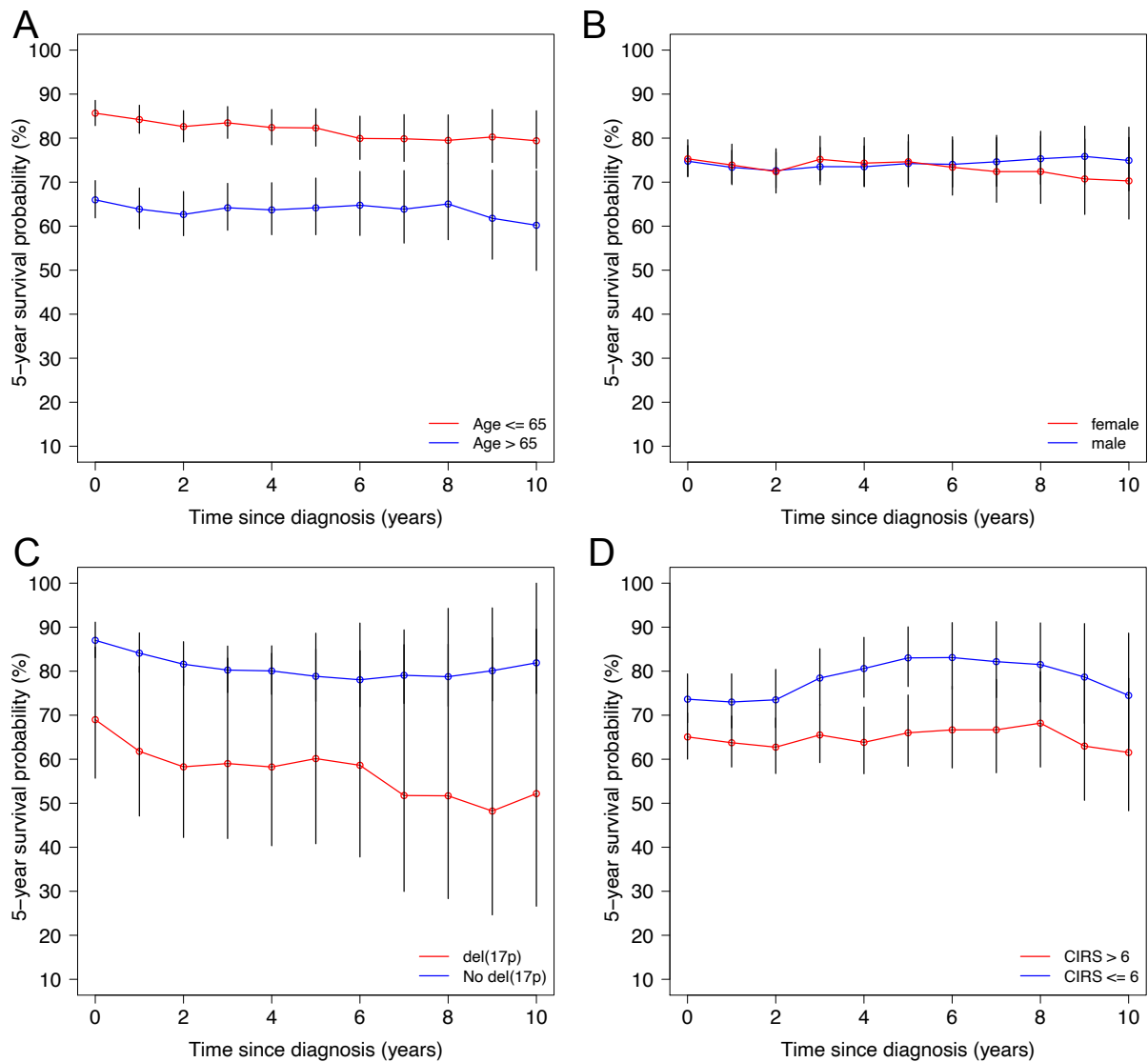
**Supp. Figure 1:** Frequency of comorbidities/comorbidity groups for patients of the Augsburg subcohort (n=564).



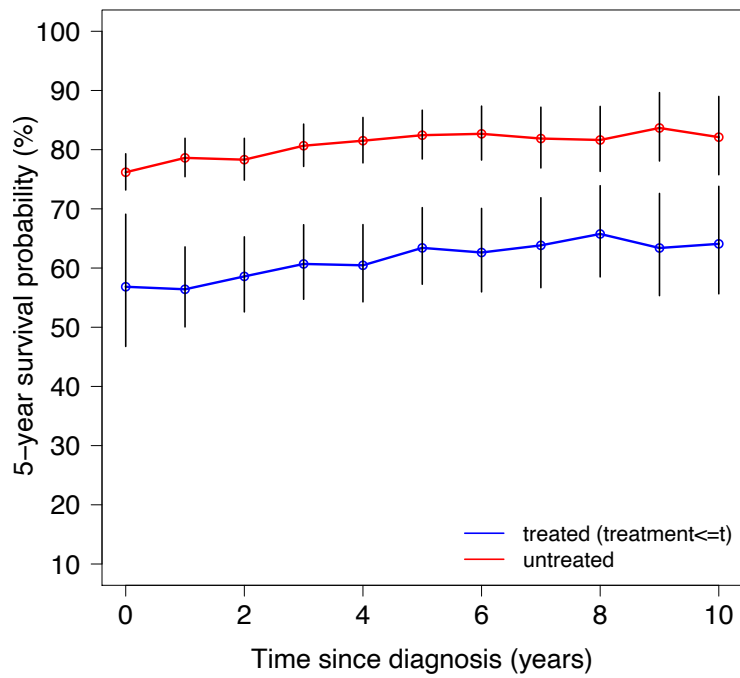
**Supp. Figure 2:** (A) OS stratified by age (>65 years) with a median OS 16.8 years vs. 6.7 years [HR 3.00 (CI 2.41-3.72);  $p=4.4e-23$ ]. (B) OS stratified by sex with a 5-year survival rate of 75.4% (CI 70.2%-80.5%) and 74.7% (CI 70.9%-78.6%) [HR 0.97 (CI 0.79-1.20);  $p=0.811$ ]. (C) Stratification of OS by clinical Rai stages. Patients with Rai 0 vs. Rai I-IV had a 5-year survival probability of 87% (CI 83%-91%) and 70.9% (CI 66.4%-75.4%) years [HR 1.64 (CI 1.31-2.07);  $p=2.0e-5$ ]. (D) Patients with stage Binet A had a superior median survival with 13.3 years compared to 6.7 years for Binet B/C patients [HR 1.71 (CI 1.38-2.13);  $p=1.3e-6$ ]. (E) Elevated B2MG serum levels are highly indicative for dismal outcome with a 5-year survival probability of 90.9% (CI 86.1%-95.6%) compared to 77.4% (CI 70.1%-84.6%) for patients with normal range B2MG [HR 2.86 (CI 1.97-4.14);  $p=2.9e-8$ ]. (F) Patients with del(17)(p13) formed the patient subgroup with the poorest survival within our cohort with a 5-year survival probability of 61.1% (CI 38.6%-83.6%) compared to 87.6% (CI 83.5%-91.8%) in patients with intact *TP53* [HR 1.90 (CI 1.16-3.11);  $p=0.011$ ]. (G) 5-year survival probabilities according to CIRS score [HR 1.40 (CI 1.07-1.84);  $p=0.013$ ].



**Supp. Figure 3: (A)** 5-year conditional survival of the entire CLL cohort (n=880) patients incorporating medical center (Augsburg versus Freiburg) as a co-variable **(B)** 5-year conditional survival of the entire CLL cohort (n=880) patients adding age ( $\leq 65$  years versus  $> 65$  years at diagnosis) as a further co-variable.



**Supp. Figure 4:** (A) Conditional survival of the entire CLL cohort (n=880), stratified by age ( $\leq 65$  years versus  $> 65$  years at diagnosis), given as the 5 year-survival rate depending on the s years already survived. (B) 5-year conditional survival of the entire CLL cohort (n=880) stratified by sex. (C) 5-year conditional survival over the course of 10 years after diagnosis stratified by cytogenetic risk (presence versus absence of del(17)(p13)) for n=357 CLL patients with available cytogenetics. (D) 5-year conditional survival stratified by extent of comorbidities (CIRS  $\leq 6$  versus  $> 6$  at diagnosis) for n=564 CLL patients with available information on comorbidities.



**Supp. Figure 5:** 5-year CS probability over the landmarks  $s=0$  to  $s=10$  years from baseline for patients having received treatment (treated) versus patients not having received any treatment over the observation period (untreated).