Background. It is known, that genetic factors and the absence of MRD are strongly affecting prognosis of CLL.

Aim. To determine the influence of genetic abnormalities (GA) on achieving MRD-negative remissions in patients with CLL.

Methods. Twenty-four pts (median age 57 years, range 35–67; male 14, female 10) with newly diagnosed CLL were included. The CLL was diagnosed according to the standard basic examination. Cytogenetic studies were performed on blood samples using standard GTG-method. Interphase FISH analyses were performed according to the manufacturer’s protocol using DNA probes. We have used NCI revised guidelines for treatment initiation and assessment of response. All patients treated subsequently with rituximab maintenance. MRD was detected by multicolor flow cytometry.

Results. The frequency of GA was 50.0% (12/24): 15.0% (3/20) – by conventional karyotyping, 47.8% (11/23) – by FISH analyses and 9.5% (2/21) – using both methods. Stratification of patients into prognostic groups based on identified GA. Favorable prognosis (Group1) - del(13q) (n = 5); neutral (Group2) - normal karyotype (n = 12) or trisomy 12 (n = 3); unfavorable (Group3) - del(11q) (n = 3) or the complex karyotype (n = 1). Statistically significant differences in the frequency of achieving MRD-negative remissions between FCR (5/11) vs. RB (5/13) were not detected (p>0.05). Complete remission (CR) was reached in 37.5% (9/24) pts, partial remission – 62.5% (15/24). The MRD-negative - in 10 patients: in Group1 – 2/5 (40%; CR – 1), in Group2 – 5/15 (33.3%, CR – 6), in Group3 – 75.0% (3/4; CR – 2). Statistically significant differences in PFS were detected between MRD-negative and MRD-positive groups (p=0.03). Median of PFS in MRD-negative has not been reached, in MRD-positive - 33.1 month.

Conclusions. Further researches aimed at examining the relationship between the presence or absence of MRD and genetic prognostic groups, will help to understand the most important factors affecting the OS and PFS.