

Summary: Bcl-2/IgH rearrangement is the molecular hallmark of follicular lymphoma. However, its clinical significance remains unclear. The aim of this study was to evaluate Bcl-2/IgH rearrangement in 50 patients with follicular lymphoma before treatment by means of nested PCR technique and to correlate molecular genetic findings with clinical characteristics and results of treatment in subgroups – with vs. without Bcl-2/IgH rearrangement. 91 samples from peripheral blood and/or bone marrow from fifty patients (median age, 56.5 years; male/female ratio: 33/17) were analysed. Samples from both compartments were available in 41 cases. Bcl-2/IgH rearrangement was analysed by nested PCR technique for both major breakpoint region (MBR) and minor cluster region (mcr). Twenty-six out of fifty patients (52 %) were positive for Bcl-2/IgH rearrangements; 24 in MBR and 2 in mcr, remaining 24 patients were negative. High correlation between Bcl-2/IgH rearrangement in peripheral blood and bone marrow was noted as well as correlation between PCR Bcl-2/IgH detection and immunohistochemistry bcl-2 detection in bone marrow. No differences were found according to initial Bcl-2/IgH status with respect to clinical course of disease in terms of complete remission achievement, improved overall survival or progression-free survival in comparison with Bcl-2/IgH negative group. The other aim of this study was to evaluate the impact of molecular remission achievement to prognosis of fifty patients with follicular lymphoma. Twenty-eight patients (56 %) were treated with chemotherapy (CHT) alone, 22 patients (44 %) with chemotherapy in combination with monoclonal anti-CD20 antibody rituximab (R-CHT). Molecular remission has been achieved more likely after R-CHT (64 %)

than after CHT (14 %), $p=0,037$. Seventeen out of twenty seven patients treated with CHT alone who did not achieve complete remission were treated with consolidation treatment with 4 doses of weekly rituximab. 12/17 (71 %) were positive in Bcl-2/IgH rearrangement. Five out of twelve patients (58 %) become negative 1 month later, in 2/5 remaining patients molecular remission has been achieved after 3 and 6 months, respectively. Bcl-2/IgH negativity during treatment was associated with: age under 65 years ($p=0.02$) and with good performance status (0+1) ($p=0.02$). Patients in molecular genetic remission in comparison with group remaining Bcl-2/IgH positive had lower risk of relapse/progression (27 % vs. 75 %, $p=0.03$), better 2-year progression free survival (81 % vs. 38 %, $p=0.004$), event free survival (74 % vs. 38 %, $p=0.01$) and borderline overall survival (87 % vs. 74 %, $p=0.05$). In conclusion, PCR negativity in Bcl-2/IgH rearrangement in our study has been associated with better clinical outcome of disease.