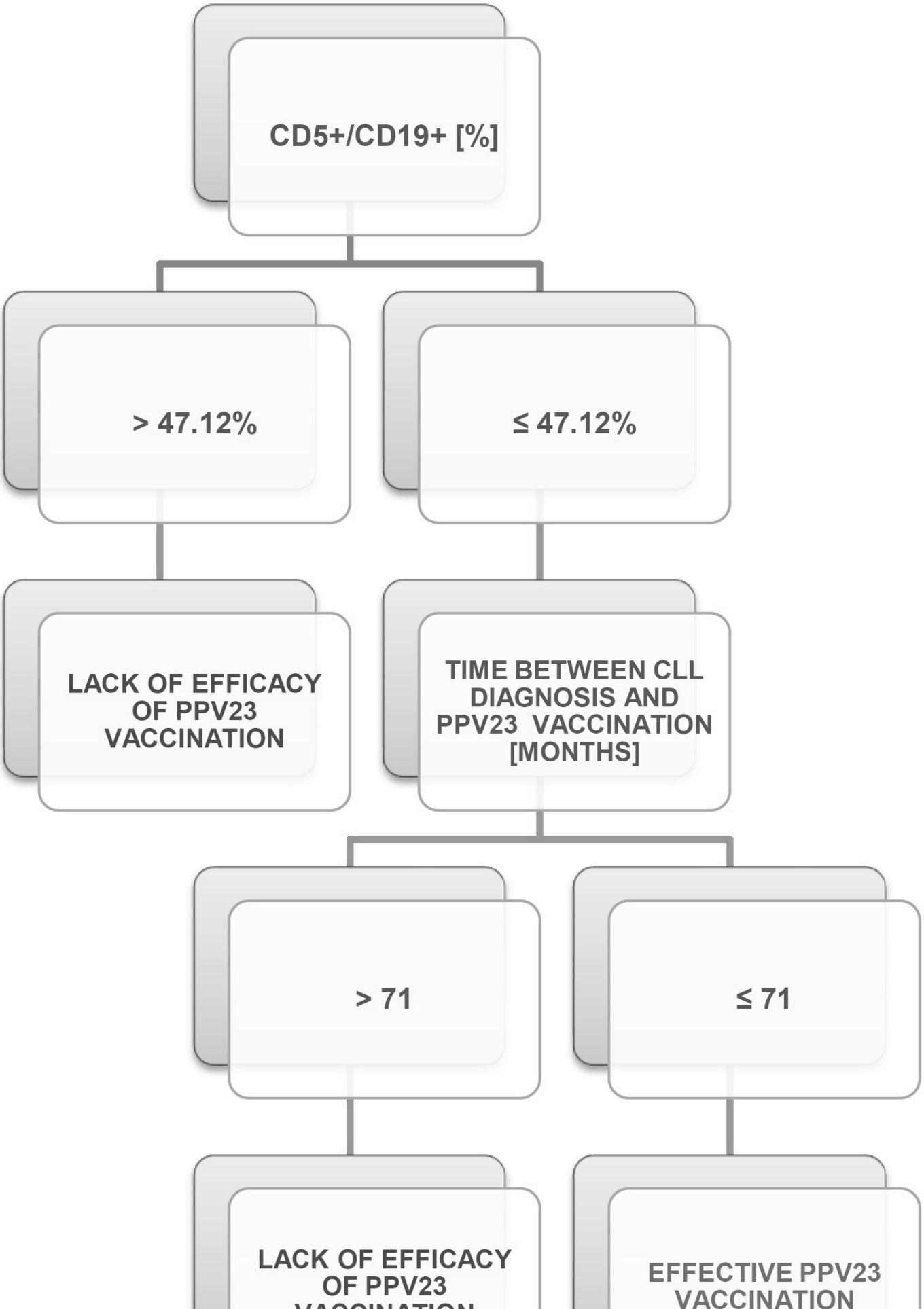
O162

Abstract (oral session)

Antibody response to polysaccharide anti-Streptococcus pneumoniae vaccine in relation to the selected immunological parameters of patients with chronic lymphocytic leukaemia

E. Grywalska*, I. Korona-Glowniak, A. Malm, J. Rolinski (Lublin, PL)

Objectives: The aim of the present study was to investigate antibody response to vaccination against pneumococcal polysaccharide and to assess its relation with the selected parameters which may act as prognostic factors of vaccine effectiveness in chronic lymphocytic leukaemia (CLL) patients. Although vaccination against Streptococcus pneumoniae is recommended for immunocompromised patients, its protective effect and predictors for the response are not sufficiently characterized. Methods: This prospective study included 25 previously untreated patients with CLL. All individuals received 23-valent capsular polysaccharide pneumococcal vaccine (PPV23). A response to vaccination, according to the manufacturer's instructions, was defined as 2-fold increase between repeated tests (pre-vaccination, and day 30 post-vaccination) in the same patient. The anti-pneumococcal antibody concentration against pooled 23-vaccine serotypes was determined by ELISA. Blood samples were collected and values of peripheral blood cell count parameters and immunoglobulin (IgA, IgM, IgG) levels were measured using standard methods. In order to assess lymphocyte subpopulations, peripheral blood mononuclear cells were separated on lymphocyte separation medium and stained with combination of relevant fluorescein isothiocyanate (FITC) - phycoerythrin (PE) - and CyChrome-labelled monoclonal antibodies and analyzed using flow cytometry method. Results: The lack of PPV23 effectiveness was observed in 20 patients (80%). Mann-Whitney-U test revealed that among patients who did response to vaccination, there were statistically significant higher levels of IgG (p=0.007) and IgM (p=0.021), and lower absolute counts of CD5+CD19+ (p=0.000), CD3+ (p=0.036), CD19+ (p=0.024), CD3+CD4+ (p=0.007), CD3+25+ (p=0.000), NKT (p=0.010), CD4+CD25+HIGH (p=0.028) cells as well as lower CD4 to CD8 ratio (p=0.016). Moreover in those cases, where vaccine efficacy was noted, the median time elapsed from CLL diagnosis to the vaccination was significantly shorter (p=0.005). An analysis with the use of the decision tree method showed that all patients with the CD5+CD19+ cells percentage higher than 47% did not response to the vaccination (Fig. 1). There was a strong correlation between the percentage of CD5+CD19+ cells and the elapsed time from CLL diagnosis (r=0.546, p=0.007). Conclusions: Vaccination should be given as soon as the diagnosis of CLL is made. Determination of post-vaccination antibody levels has to become a standard in patients with CLL.


CD5+/CD19+ [%]
> 47.12%
≤ 47.12%
LACK OF EFFICACY OF PPV23 VACCINATION
TIME BETWEEN CLL DIAGNOSIS AND PPV23 VACCINATION [MONTHS]
> 71
≤ 71
LACK OF EFFICACY OF PPV23
EFFECTIVE PPV23 VACCINATION