

## SUMMARY

The recent knowledge about prognostic factors in metastatic colorectal cancer, and tumour immunology of advanced cancer is briefly reviewed in the theoretical part of this dissertation. The experimental part of the work deals with a description of investigation for relations between the peripheral blood cells immunophenotype data acquired by two-colour flow cytometry (FACS) of blood samples from patients with colorectal liver metastases, and the overall survival of these patients. The three different statistical approaches were adopted for FACS and survival data from this sample of 59 patients with colorectal liver metastases. Firstly, uni- and multivariate analysis of survival together with linear regression analysis for a selection of such parameters of the peripheral blood cells phenotype which are in form of continuous variables the independent prognostic factors for overall survival. Secondly, the method of ROC curves, used here for indirect validation of the results achieved from regression and survival analysis. And in the third line, the method of induction graphs which enables targeted discretisation of continual values of the phenotype parameters, and classification of patients on the two groups with different overall survival. Some of the approaches used in this problem area, and achieved results are quite original. In the last part of the work, the results are reviewed as for the current theoretical knowledge, and their interpretation and biological importance altogether with sources of eventual errors and general validity are discussed.