

Abstract

In this thesis entitled "The prognostic significance of molecular markers of acute myeloid leukemia on the outcome of allogeneic hematopoietic stem cell transplantation" the author deals with the following issues:

1. In the literature overview: the author characterizes the epidemiology, pathogenesis, diagnostics, prognosis and treatment of acute myeloid leukemia, focusing on evaluation of different prognostic markers in relation to the treatment of acute myeloid leukemia mainly using allogeneic hematopoietic stem cell transplantation.

1. The methodological section characterizes the following:

- a) Groups of patients and methods of clinical evaluation in:
 - Detailed characteristics of 60 patients with acute myeloid leukemia with normal karyotype and NPM1 gene mutations in complete remission who underwent allogeneic hematopoietic stem cell transplantation on Haematology and oncology department of University Hospital Pilsen in the years 2005-2014. The evaluation of other parameters of the underlying disease, and a detailed description of transplant procedure (donor selection, the type of pre-transplantation preparation etc.) is also part of characteristics.
- b) The timing and method of sampling for evaluation of the level of minimal residual disease before transplantation. Description of the method for detection of the level of minimal residual using assessment of the relative expression of mutated NPM1 gene by quantitative polymerase chain reaction.
- c) The statistical parameters and methods employed

3. In the final section the author demonstrates that:

- a) The level of minimal residual disease in patients with acute myeloid leukemia in complete remission vary before the start of pretransplantation conditioning regimen.
- b) The level of minimal residual disease in patients with acute myeloid leukemia prior to allogeneic hematopoietic stem cell transplantation statistically significantly affects the transplant results.

4. The thesis provides an overview of relevant literature which includes 341 sources and overview of author's own publications on this particular field.

Key words: acute myeloid leukemia, NPM1 mutation, minimal residual disease, allogeneic hematopoietic stem cell transplantation