chemotherapy: 6 achieved a complete remission (CR) and 3 did not respond. Five of the 6 CRs relapsed and were unable to achieve a new CR. Eleven high expressers received induction chemotherapy: 8 achieved CR and 3 did not respond. Four of the 8 CRs relapsed but succeeded in achieving a second CR. In *Conclusion.* 56% of our AML patients presented a BAALC expression significantly higher than that of the remaining 11 patients; a high BAALC expression correlated with +8 and inv(16) (p13q22); high BAALC expressers showed a CR duration and an overall survival longer than those of low expressers perhaps because of the higher occurrence of +8 and inv(16) in the first patient group.

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THE OUTCOME OF POSTREMISSION TREATMENT FOR AML WITH FAVORABLE CYTOGENETICS IN FIRST REMISSION

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Background. The beneficial impact of high-dose cytarabine (HDAC)-based consolidation chemotherapy in acute myeloid leukemia (AML) is much greater in patients with favorable cytogenetics (t(8;21), inv(16) and t(16;16)) than in those with normal karyotypes. However, in MRC AML 10 study, patients with favorable cytogenetics who received autologous stem cell transplantation (SCT) had a markedly lower relapse rate than those who did not receive autologous SCT, although a high procedural mortality rate in adults resulted in being ultimately no difference in the overall survival (OS). Allogeneic SCT have not been recommended as standard therapy for AML with favorable cytogenetics due to relatively high treatment related mortality (TRM). However, progress in SCT and supportive care over the past decades have led to gradual improvement in the TRM after allogeneic SCT. *Aims.* We try to compare the outcome of allogeneic SCT with HDAC during the first remission of AML with favorable cytogenetics. *Methods.* 50 AML patients with favorable cytogenetics (excluded AML, M3) who entered complete remission (CR) between March 1997 and July 2005 at three centers were reviewed retrospectively. Among 50 patients, 13 patients who relapsed or died during consolidation chemotherapy, received less than three cycles of consolidation chemotherapy or underwent autologous SCT in first remission were excluded. Overall, 37 AML patients over the 18 years with favorable cytogenetics who underwent allogeneic SCT or received three/four cycles of HDAC consolidation chemotherapy in first CR could be analyzed. *Results.* The median follow up duration was 43 months. The 5-year probability of disease free survival (DFS) and OS were 50.3% and 51.6%, respectively. The estimated 5-year probability of DFS (73.2% vs 21.0%) (p=0.005) and OS (71.9% vs 28.9%) (p=0.03) were significantly better in the patients who underwent allogeneic SCT than in those who received HDAC. The cumulative incidence of TRM and relapse rate were 9.57% and 18.6%, respectively. In the subset analysis, OS was better in the allogeneic SCT group than in the HDAC group in the setting of age < 35 years (5-year estimated OS: 100% vs 33.3%) (p=0.0054), but not different in age ≥ 35 years (p=0.54). The OS was statistically superior for allogeneic SCT group versus HDAC group in the setting of chromosomal abnormalities ≥ 2 (5-year estimated OS: 72.9% vs 41.7%) (p=0.007), but not in chromosomal abnormalities < 2 (p=0.36). *Conclusions.* In AML patients with favorable cytogenetics (especially younger age) who have a matched related donor, allogeneic SCT can be option. Especially those who have more than 2 chromosomal abnormalities should undergo allogeneic SCT with matched related donor or unrelated donor. It is needed that AML patients with favorable cytogenetics who have sibling matched donor are assigned to allogeneic SCT and remaining to HDAC or autologous SCT are randomly assigned.

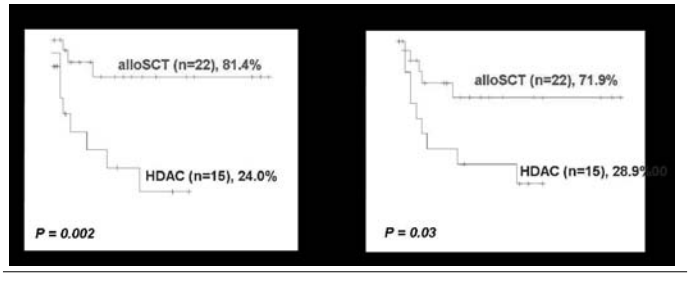

Figure 1. DFS, OS by postremission therapy.

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ARE FLT3 ITD AND D835 MUTATIONS SUFFICIENT INDICATORS FOR ALLOGENEIC TRANSPLANTATION IN ACUTE MYELOID LEUKEMIA? AN ANALYSIS OF PATIENTS FROM THE CZECH ACUTE LEUKEMIA CLINICAL REGISTER (ALERT)

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Background. FMS-like tyrosin kinase 3 (FLT3) is preferentially expressed on hematopoietic progenitor cells and mediates stem cell differentiation and proliferation. Two types of activating FLT3 mutations have been described in acute myeloid leukemia (AML): internal tandem duplication (ITD) of the FLT3 gene and point mutation within the activation loop of the tyrosin kinase domain, which mostly affects asparate 835 (D835). Many studies have shown that presence of FLT3 ITD correlates with poor outcome of AML patients. The prognostic relevance of D835 mutation is less clear, although most likely it also has a negative prognostic effect on the patients with AML. So far it is not clear how to treat the patients with FLT3 ITD and D835 mutations compare to patients without these mutations and whether these patients benefit from allogeneic blood stem cells transplantation. *Patients and Methods.* To assess the prognostic relevance of activating mutations of FLT3 gene on outcome of allogeneic transplantations in AML patients, we performed an analysis of all patients with FLT3 mutations registered in the Czech Acute Leukemia Clinical Register (ALERT) from 2003 till the end of 2005. ALERT registers all adult patients diagnosed in 6 main haematology centres in the Czech Republic. *Results.* Within the mentioned period 170 patients with AML of median age 59 years (in total) were investigated for FLT3 mutation, within them 37 cases (22%; 19 men and 18 women) with FLT3 mutations (33 FLT3 ITD and 4 FLT3 D835) were found. 33 patients were suitable for analysis. 13 of these patients had allogeneic transplantation, 20 patients with mutations of FLT3 were treated with chemotherapy without transplantation. Results of the treatment of these patients were compared with the results of the group of patients without FLT3 mutation, which was according to other characteristics identical with the group of patients with FLT3 mutations (n=125). *Results.* Median overall survival (OS) of patients with mutations of FLT3 who had allogeneic transplantation was 42.5 weeks, median survival of patients with mutations of FLT3 treated only with chemotherapy was 29.6 weeks (p=0.4). Median disease free survival (DFS) of the same patients was 32.1 weeks in transplanted patients and 24.3 weeks in patients treated only with chemotherapy (p=0.6). OS of patients with mutations of FLT3 compared to patients without mutation FLT3 was not significantly different. A significant difference was found in DFS only. Patients with FLT3 mutations had DFS shorter than patients without FLT3 mutations (28.2 weeks compare to 50.2 weeks; p=0.05). *Conclusions.* Our results suggest that at present there is no strong evidence that FLT3 status alone should influence the decision to proceed to allogeneic transplantation in AML patients. Decision to proceed to alogeneic transplantation should not be based on the FLT3 status only, but it should also consider other prognostic factors. Although the mutations FLT3 mean higher risk of relapses, according to our analysis they do not significantly influence the OS of AML patients.

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OPTIMISATION OF A 48HOUR *IN VITRO* CHEMOSENSITIVITY ASSAY FOR CD34+CD38-CD123+ LEUKAEMIC STEM AND PROGENITOR CELLS

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Background. The majority of AML patients respond to remission-induction chemotherapy, but the relapse rate is high. Relapse is underpinned by outgrowth of leukaemic stem and progenitor cells (LSPC). There is a need to develop chemosensitivity assays for LSPC. *Aim.*We aimed to establish a methodology to distinguish normal from leukaemic SPC, to optimise maintenance of the LSPC phenotype in 48 hour culture and to quantify viable LSPC following culture with and without drugs. *Methods and Results.* The CD34+CD38-CD123high phenotype was used to