Role of allo-HCT in acute myeloid leukemia patients with NPM1wt and FLT3-ITD negative group

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Background/Aims: One of the most potent prognostic factors affecting outcomes in AML is the presence of molecular markers which can guide the selection of post-remission therapy. Recently, favorable outcomes of NPM1wt/FLT3-ITDneg/non-CEBPAdm group after allo-HCT have been reported, that is similar to those of favorable risk by the ELN risk classification.

Methods: The data of 88 patients who were diagnosed with AML and received intensive induction therapy from 2015 Mar to 2017 Jul were included in this study. To address the time dependence of the allo-HCT, the Simon and Makuch method was used and the Mantel-Byar test and Andersen and Gill methods for identifying risk factors for long-term survival.

Results: NPM1 mutation was detected in 14 patients, and FLT3-ITD were none, low, and high ratio in 69 patients, 9 and 10, respectively. The ELN risk classification divided the patients into favorable, intermediate, and adverse risk group in 31 patients, 38 and 19, respectively. NPM1 and FLT3-ITD both negative group included 29 patients. Allo-HCT was performed in 48 patients. Overall, complete response after induction therapy achieved in 63 patients and 7 patients were primary refractory disease. CR rates did not differ between NPM1wt/FLT3-ITD negative group (n=17/29, 58.6%) and other intermediate risk group. With median follow-up duration of 12.9 months, one-year OS rate were 100%, 83.5±6.9%, 56.1±12.8% in favorable, intermediate, and adverse risk group. Allo-HCT was performed in 11 patients of NPM1wt/FLT3-ITD negative group. One-year OS rate did not differ between NPM1wt/FLT3-ITD negative and other intermediate risk (p=0.622). In the multivariate analysis, ELN risk group was identified as the only risk factor for OS. Allo-HCT was not an independent favorable factor for OS in NPM1wt/FLT3-ITD negative group.

Conclusions: NPM1wt/FLT3-ITD negative group showed similar CR and OS rates compared to other ELN intermediate group. Allo-HCT did not improve the OS rate of this group. Therefore, the implication of allo-HCT to this group needs to be carefully considered considering other high risk factors.