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Allografting is curative in acute myeloid leukemia (AML).

Aim of the study: To evaluate outcomes in newly diagnosed patients, younger than 66, who achieved complete remission (CR) after induction/consolidation therapy at the Divisions of Hematology at Città della Salute e della Scienza, Università di Torino, Torino, Italy, between 2000-2011

Methods: 302 AML patients (except FAB-M3) were consecutively diagnosed and stratified by risk as follows: low risk included presence of t(8;21), inv(16)/t(16;16); high risk features included WBC>50.000/uL at diagnosis, secondary leukemia, presence of extramedullary AML, complex karyotype, chromosomal monosomy, no remission after induction, and FLT3/ MLL mutations (since 2004). Intermediate risk included patients who did not meet either low or high risk criteria. Moreover, the standard risk group included low+intermediate risk patients. Patients were treated according to Center guidelines or on clinical trials active at the time of diagnosis. All high risk patients were considered for an allograft since diagnosis **Results** After induction/consolidation, 229/302 patients (76%) achieved complete remission: 16/229 (7%) were at low, 54/229 (24%) at intermediate, and 159/229 (69%) at high risk respectively. Eighty/159 (50%) high risk patients received an allograft as 1st line treatment; 56% from a HLA-matched sibling, 42% from an unrelated donor and 2% received a haplo-identical transplant. Seventy-nine/159 (50%) did not receive an allograft primarily because of failure to find a suitable donor either sibling or unrelated. At median follow-ups of 53 months from induction therapy and 49 months from achieving CR, 5-year overall survival (OS) and 5-year event free survival (EFS) of the entire patient cohort were 45% and 35% respectively. By risk category, standard risk patients showed a 5-year OS of 56% and high risk patients of 40% (p=0.008). Five-year EFS was 37 and 34% in standard and high risk patients respectively (p=0.194). High risk patients who underwent an allograft up-front showed a 5-year OS of 53% and showed a statistically significant advantage as compared with those who did not receive a transplant (p=0.018)

Conclusion: Allografting plays a pivotal role in OS and EFS for high risk acute myeloid leukemia. The lack of a donor is associated with bad clinical outcomes. Prospective clinical trials designed to evaluate the use of more readily available donors such as haploidentical siblings or parents are needed.