

Stronger impact of centre type compared to activity volume and quality management on the performance of autologous hematopoietic stem cell transplants in adults: report of the Belgian Transplant Registry

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Objectives

Introduction of the JACIE quality management has been shown to improve performance of allogeneic hematopoietic stem cell transplants (HSCT), but its impact on autologous-HSCT remains unclear. We aimed at evaluating performance of Belgian transplant autologous-HSCT centers.

Methods

Adjusted 1-year and 3-year survivals of 2697 autologous-HSCT performed in adult patients (2007-2013) were compared between the 17 Belgian centres by applying a fixed effects censored data generalized linear regression model. The impact of 3 centre-related factors was investigated: time between JACIE accreditation achievement by centre and the considered transplant, centre activity volume and type of HSCT performed by centre (autologous only vs autologous/allogeneic).

Results

Transplant year, Karnofsky performance status, Disease Risk Index (DRI) and number of transplants were retained for 1-yr survival. In addition to these variables, age at transplantation and time between diagnosis and transplant were selected for 3-yr survival. The overall adjusted survival was 89% at 1 year and 78% at 3 years in Belgium.

The performance between Belgian centres was relatively homogeneous before national completeness of JACIE implementation, with 3 centers over- and 2 under-performing at 1 year (1 and 2, respectively, at 3 years). The 3 centre-related factors had a significant impact on 1-yr survival, while only activity volume and type of HSCT did so on 3-yr survival in univariable analyses. In multivariable analyses, only activity volume (impact on 1-yr survival) and type of HSCT (impact on 1-yr and 3-yr survivals) remained significant.

Conclusion

The absence of impact of JACIE accreditation may be explained by the strong relationship between the 3 centre-related factors and/or by the fact that type of center (auto only versus auto & allo) conveys a multitude of underlying complex factors including accreditation. For the first time, our national study identifies centre activity and type of center as predictors of survival after auto-HSCT.