

## P537 SURVIVAL AFTER ALLOGENEIC TRANSPLANTATION FOR ACUTE MYELOID LEUKEMIA IN ADULTS IN DENMARK FROM 2000 TO 2020: A POPULATION-BASED COHORT STUDY

**Topic:** 04. Acute myeloid leukemia - Clinical

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**Background:** Allogeneic hematopoietic cell transplantation (HCT) is a potentially curative treatment of acute myeloid leukemia (AML), but survival is challenged by the risk of relapse and treatment-related/non-relapse mortality (NRM). In the recent two decades, older patients (>50 years of age) and patients with comorbidities have been able to receive HCT due to the introduction of non-myeloablative conditioning in Denmark in 2001.

**Aims:** We aimed to investigate trends in overall survival (OS) and other HCT-related outcomes in a population-based cohort study of all adults (≥18 years) who received a first HCT for AML in Denmark between 2000–2020.

**Methods:** Indications for HCT comprised intermediate- or adverse-risk (including secondary/treatment-related) AML in 1<sup>st</sup> complete remission (CR) and all patients in ≥2<sup>nd</sup> CR. The total effect of calendar year of HCT on transplant outcomes was tested in a Cox model for OS and Fine-Gray competing risks models for NRM, relapse, grade II–IV acute graft-versus-host disease (GvHD) and chronic GvHD. Time-specific OS estimates and cumulative incidences of HCT outcomes were derived using the pseudo-observation framework. Cure fractions (the fraction of patients who experienced no excess mortality compared to the Danish general population matched on calendar year, age and sex) were estimated in a mixture cure model.

**Results:** From 2000 to 2020, 659 adults received a first HCT for AML (95% *de novo* AML; 5% secondary/therapy-related AML) in Denmark. Median (min–max) age at HCT was 56 (19–74) years, going from 44 years in 2000–2005 to 59 years in 2016–2020. 63% of patients were transplanted in 1<sup>st</sup> CR, 35% in ≥2<sup>nd</sup> CR, and 2% after primary induction failure. Non-myeloablative conditioning was performed in 60% of patients, going from 26% in 2000–2005 to 65% in 2016–2020. Median follow-up was 7.5 years. Main causes of death during follow-up were relapse (56%), infection (11%), and organ failure (10%). OS at 2- and 5-years for all patients was 66% (95% CI: 63–70%) and 57% (95% CI: 53–61%), respectively. OS differed over time ( $p = 0.02$ ), decreasing from 2000 to 2010 from when it increased until 2020 (Figure Panel A). This change was mainly driven by corresponding changes in NRM over time ( $p < 0.001$ , Figure Panel B) rather than significant increases in the relapse rate over time ( $p = 0.16$ , Figure Panel C). Adjusting for age did not influence the trends notably. For acute GvHD, the risk decreased over time ( $p = 0.004$ ), ranging from a 1-year cumulative incidence of 42% (95% CI: 26–62%) in 2000 to 26% (95% CI: 19–34%) in 2020, whereas the risk of chronic GvHD remained stable ( $p = 0.49$ ), with a 2-year cumulative incidence of 49% (95% CI: 45–53%) in the full cohort. Cure fractions differed over time ( $p = 0.05$ ) decreasing from 63% (95% CI: 41–78%) in 2000 to 46% (95% CI: 38–54%) in 2010, and increasing again to 68% (95% CI: 52–80%) in 2020.

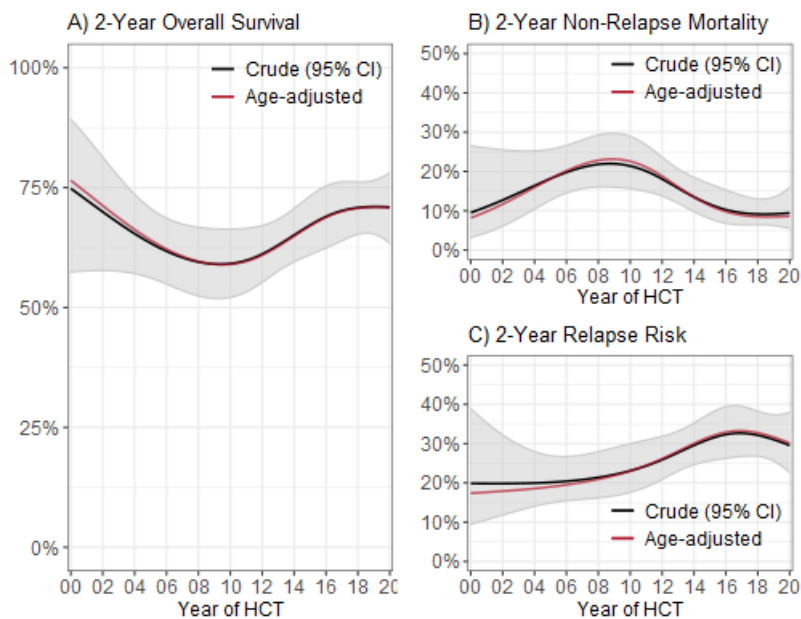
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**Summary/Conclusion:** Survival after HCT for AML in adults in Denmark decreased in the first decade after introducing non-myeloablative conditioning regimens for older or comorbid patients, mainly because of higher NRM, but survival improved again in the later decade. The risk of acute, but not chronic, GvHD decreased over time. The latest improvements in peri-HCT supportive care and post-HCT maintenance treatments may further improve survival in the coming decade.

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