Tidsskriftet Tidsskrift for Den norske legeforening

Equal access to high-quality care across all regional health authorities

INVITERT KOMMENTAR

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The author has completed the ICMJE form and declares no conflicts of interest.

More patients than ever are undergoing allogeneic stem cell transplantation as a treatment for acute myeloid leukaemia. Access to this intervention is consistent throughout Norway.

In a study published in this edition of the Journal of the Norwegian Medical Association, Busterud et al. examine the use of allogeneic stem cell transplantation as consolidation therapy for patients with acute myeloid leukaemia (AML) (1). During the study period, which stretched from 2005 to 2022, 87 % of the patients were transplanted at Rikshospitalet in Oslo. Rikshospitalet had sole national responsibility for this service provision until 2005, and the transplantation programme was accredited in 2017 (2). Since 2006, Haukeland University Hospital has performed transplants on selected patients using related donors.

Just over 20 % of the 2979 patients with AML during the study period underwent allogeneic stem cell transplantation. One of the study's aims was to identify whether there were significant differences between Norway's regional health authorities in the use of allogeneic stem cell transplantation. None were found.

Transplantation became steadily more common during the study period. In 2005, 14 patients with AML were transplanted, compared to 50–60 in recent years. Several factors are crucial for achieving the best possible outcome: selecting patients for whom the benefits outweigh the risks, conducting the

transplantation programme in line with international standards, and close follow-up after discharge, carried out by haematologists at local hospitals in collaboration with the transplantation unit.

When the transplantation programme started in 1985 (3), the upper age limit was 40 years (4). In the early 2000s, this was raised to 60 years (4). In the study, the oldest transplanted patients from all four regional health authorities were between 72 and 74 years old. Although the median age of patients from South-Eastern Norway (54 years) and Northern Norway (60 years) was higher than that of patients from Western Norway (50 years) and Central Norway (48 years), this did not negatively affect prognosis. On the contrary, generally better outcomes were observed over time during the period. Significantly more patients (63 %) were alive five years after transplantation in the latest period (2017–22), compared to the first period (48 %, 2005–10).

The high median age of patients undergoing allogeneic stem cell transplantation in Northern Norway could perhaps be explained by demographic factors. For most of the period, national guidelines were in place for treating AML and regular meetings were held between representatives from transplantation units and the other university hospitals to ensure standardised treatment. Consequently, there are less likely to be differences in terms of comorbidity or the assessment of older patients between the regional health authorities. A national registry of patients with AML could have provided useful information on this, but no such registry has been established yet.

Allogeneic stem cell transplantation reduces the risk of relapse by 60 % (5). Age is a significant risk factor for transplant-related mortality in patients undergoing myeloablative conditioning (bone marrow ablation). Reduced-intensity conditioning, which is tolerable for older patients, has enabled transplantation in this population. Toxicity in the early post-transplant phase is reduced, and the effect of the new immune system (graft-versus-leukaemia (GvL) effect) is crucial for preventing relapse.

> ***«Allogeneic stem cell transplantation reduces the risk of relapse by 60 %»***

During the study period, a significant reduction was observed in transplant-related mortality. Infection prophylaxis and pre-emptive treatment for cytomegalovirus reactivation were used throughout the study period, so the reduction cannot be explained by the decline in infections. Data from Rikshospitalet, however, have shown a marked decrease in both acute and chronic graft-versus-host disease (GvHD) after antithymocyte globulin was introduced in 2014 as prophylaxis against GvHD in patients without a related donor who received peripheral blood stem cells (6).

> ***«During the study period, a significant reduction was observed in transplant-related mortality»***

Major changes have also been seen in clinical practice for other blood cancers in recent years. In 2001, the tyrosine kinase inhibitor Glivec (imatinib) was introduced to the market, leading to a sharp decline in the number of patients with chronic myeloid leukaemia undergoing transplantation (3). The prognosis for acute lymphoblastic leukaemia (ALL) has improved due to the use of slightly modified paediatric protocols for young adults (7), the introduction of a bispecific antibody (blinatumomab) and the use of tyrosine kinase inhibitors in Philadelphia chromosome–positive cases (8). CAR T-cell therapy has also been approved for patients with refractory ALL or those experiencing relapse (8).

Advances in developing effective new therapies for AML have been slower. Targeted adjunctive therapies during induction treatment, along with improved methods for selecting patients likely to benefit from transplantation – based on sensitive detection of residual disease – are already in use and are expected to apply to more AML subgroups in the future.

According to Statistics Norway's report *Seniors in Norway 2024*, the number of people over the age of 67 is expected to almost double by 2060 (9). As a result, a growing number of relatively healthy older adults are expected to be diagnosed with AML and may become eligible for allogeneic stem cell transplantation. The reduction in complications and the demonstrated benefit of transplantation in older patients is therefore encouraging.

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Publisert: 8 October 2025. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.25.0540