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Utility of the 2024 Best practice recommendations from the EBMT Cellular Therapy and Immunobiology Working Party for use of donor lymphocyte infusions after allogeneic haematopoietic stem cell transplantation

Clinical hemato-oncology

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Background and Objective:
Donor lymphocyte infusions (DLI) are a widely employed strategy to increase the graft-versus-tumor (GvT) effect but can increase non-relapse mortality (NRM) risk mainly secondary to the induction of graft-versus-host disease (GvHD). In recent recommendations (Pagliuca et al, Lancet Haematol. 2024) , the EBMT CTIWP proposed the use of T cell doses adapted to the DLI indication (prophylactic, pre-emptive and therapeutic), the donor type and the time of infusion.

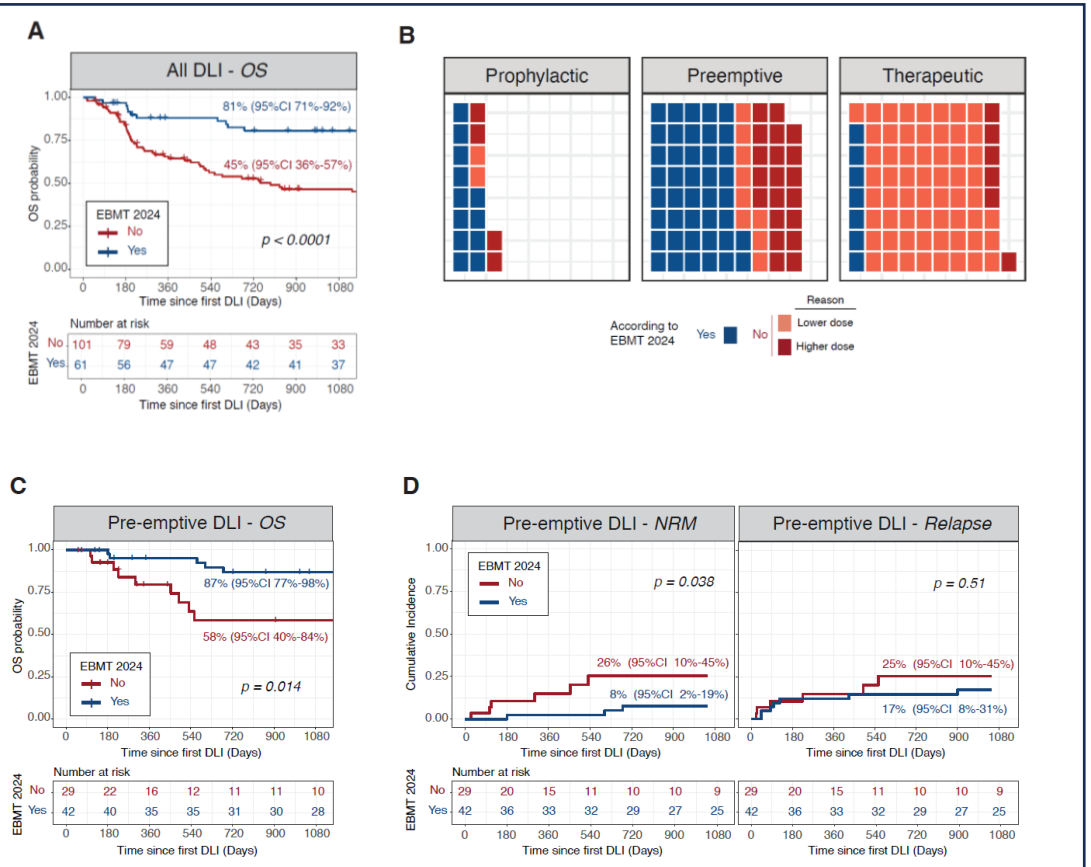
Methods:
To evaluate the utility of these recommendations on real-world data, we retrospectively analysed a cohort of **162 patients receiving DLI** after allogeneic HSCT at our center between January 2010 and December 2023 and their outcomes considering if the first dose of DLI was administered in accordance or not with the EBMT 2024 recommendations.

Results:
Median age at allogeneic HSCT was 51 years (range 15-74). First dose of DLI was infused in a median time of 214 days (range 60-3753 days) after allogeneic HSCT. No patient received immunosuppressive drugs at time of DLI. Thirty-seven percent of patients had a history of GvHD (acute GvHD, n=60 and/or chronic GvHD, n=8). Median number of DLI infusions was 2 (range 1-7).

We observed a significantly improved overall survival (OS) of patients receiving DLI according to the EBMT recommendations (81%, 95%CI 71%-92%) compared to patients receiving different doses (45%, 95%CI 36%-57%; p<0.0001, Figure A). The proportion of patients receiving DLI according or not to the EBMT recommendations differed depending on the DLI indication (Figure B).

In the subgroup receiving pre-emptive DLI, the 42 patients who received doses in accordance with the EBMT 2024 recommendations showed a significantly improved OS (p=0.014) lower NRM (p=0.038), respectively 87%(95% CI 77%-98%) and 8%(95% CI 2%-19%) compared to patients receiving different doses (respectively 58% (95% CI 40%-84%); 26% (95% CI 10%-45%), Figure C and D). Patients receiving pre-emptive DLI at doses higher than the ones recommended by EBMT displayed a higher cumulative incidence of grade 2-4 acute GvHD within 100 days since DLI infusion (35%, 95% CI 15.1%-55.8%) compared to patients receiving DLI doses according to EBMT recommendations (11.9%, 95%CI 4.3%-23.7%; p=0.023). We observed no difference in terms of relapse incidence between the two groups (p=0.51, Figure D).

Conclusion:
Despite several limitations, our data support the utility of the new EBMT 2024 recommendations on DLI administration after allogeneic HSCT .



Reference: Pagliuca S, *et al*; Donor lymphocyte infusion after allogeneic haematopoietic cell transplantation for haematological malignancies: basic considerations and best practice recommendations from the EBMT. Lancet Haematol. 2024 Jun;11(6):e448-e458. doi: 10.1016/S2352-3026(24)00098-X. PMID: 38796194.

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