Fertility potential and gonadal function in survivors of reduced-intensity hematopoietic cell transplant

A collaborative multi-institutional study led by Cleveland Clinic

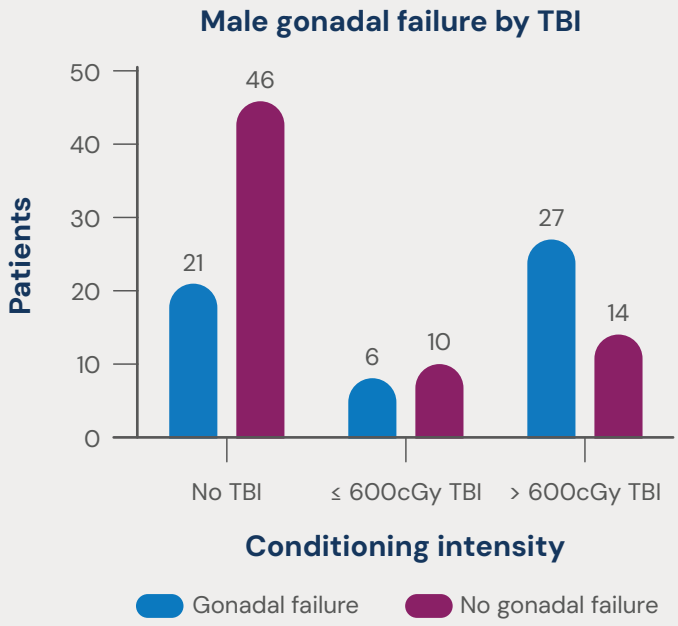
Study details:

This study aimed to evaluate the fertility potential and gonadal function in adolescent and young adult survivors of hematopoietic cell transplant (HCT). Researchers focused on comparing outcomes between reduced-intensity conditioning (RIC) and myeloablative conditioning (MAC) regimens. The study included 326 patients aged 10-40 years from multiple institutions in the United States and Brazil who underwent their first allogeneic HCT before Dec. 1, 2019. The analysis considered key factors such as age, conditioning intensity and total body irradiation (TBI) dose.

Results at a glance:

- No significant difference in fertility potential or gonadal toxicity were observed between RIC and MAC regimens.
- Among female patients, 55.3% experienced gonadal failure, with older age at HCT being a significant risk factor.
- Among male patients, 44% experienced gonadal failure, also with older age and higher doses of TBI significantly increasing the risk.

Figure: Male gonadal failure based on TBI dosage.



Clinical impact:

The findings of this study highlight that RIC does not provide a protective effect against gonadal failure compared to MAC in HCT patients. These results underscore the critical need for thorough fertility preservation counseling before HCT, particularly for older patients who are at higher risk. Additionally, regular screening for gonadal failure should be a part of long-term follow-up care to address fertility issues proactively. This information is vital for guiding family planning and treatment decisions for patients considering HCT.

Scan to review more recent clinical research

Read the published abstract in Transplantation and Cellular Therapy (DOI: 10.1016/j.jtct.2024.02.002).

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