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Male fertility preservation at risk of gonadotoxicity

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Abstract

Background: Along with other aspects of male reproduction, fertility preservation has made significant advances in the past ten years. The overall survival rate for childhood cancer has greatly improved in recent decades, with a current 5-year survival rate of over 80%, compared to roughly 58% in the late 1970s. Many of the most common reproductive issues, such as cryptorchidism and hypospadias in newborns as well as testicular cancer and lower sperm quality in young adult males, have recently become increasingly common. Although the precise cause of these unfavorable effects on reproduction is yet unknown, it has been suggested that they may be related to the presence of common chemicals in the environment or exposure to specific drug classes during fetal life. Large progress has been achieved in recent years toward understanding the biology of male and female reproduction in both animals and humans and applying this information to the creation of methods for fertility preservation in a variety of clinical and ecological contexts.
Conclusions: A rapidly developing area, fertility preservation has a wide range of applications, from preserving the possibility of fertility in a child with cancer to preventing the extinction of an entire species. The emphasis on preserving fertility is now only placed on cancer patients who are of reproductive age, but its therapeutic importance may be extended to non-cancer patients as well.
Key words: prepubertal human testis, childhood cancer, gonadotoxicity, side effects, fertility preservation.

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