Recommendations on Fertility preservation for boys and young men with childhood cancer

Nordic Network for Gonadal Preservation after Cancer Treatment in Children and Young Adults, finalized March 2011, revised Feb 2015

Adaptation to adult guidelines should be considered when the boy has reached the maturity of a young adult.

Pubertal and postpubertal males

All males who are physically mature enough to produce sperm should be offered cryopreservation of sperm before oncological treatment with potentially gonadotoxic effect (i.e. all chemotherapy and radiotherapy with the gonads in the radiation field) is started.

All boys should be examined regarding pubertal development (Tanner stage and testicular volume). If the testes are 6-8 ml, there is a reasonable probability of sperm in an ejaculate.

The boy should be informed by a professional, specially assigned for this purpose, e.g. an andrologist, pediatric endocrinologist or fertility specialist, according to local availability and routines. It is important that the autonomy of the boy is respected and that he is offered the opportunity of individual consultation.

If the boy is unable to produce an ejaculate, alternative methods like vibrator stimulation or electrostimulation during anesthesia could be offered.

If the boy produces an ejaculate with azoospermia, an invasive procedure to retrieve testicular sperm may be considered, provided that the boy is motivated himself. The responsible pediatric oncologist must first be consulted to make sure that no contraindications (such as risk of tumour spread (e.g. in ALL) or bleeding disorder) to such procedures are present.

The boy, as well as his parents, should get verbal and written information about the procedures and the legal implications. The information should be adjusted for the boy's age and he must give his informed consent to the cryopreservation.

Prepubertal boys

Boys, who are facing oncological treatments associated with a very high risk of infertility, could be offered the experimental procedure of testicular biopsy cryopreservation. At present, there are no methods to ensure fertility after such procedures, thus further research is warranted. Since the patient number is limited, the cryopreservation and research should be centralized.

The parents and, if old enough, the boy should get verbal and written information about the research project and give informed consent to the cryopreservation and to participate in the research.

Patients eligible for prepubertal testicular biopsy (may change with time and should be updated yearly):

- ✓ Allogeneic/Autologous SCT
- ✓ RT with testis in the field

Boys who undergoes orchidectomy may also be offered cryopreservation of the removed tissue.

References

Hagenas, I., N. Jorgensen, et al. "Clinical and biochemical correlates of successful semen collection for cryopreservation from 12-18-year-old patients: a single-center study of 86 adolescents." Hum Reprod **25**(8): 2031-8.

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