

## The Use of Goserelin in Adolescent Oncofertility

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**Background:** Fertility preservation in patients receiving gonadotoxic therapy has the potential to positively impact quality of life. The use of gonadotropin-releasing agonists (GnRHa) for fertility preservation has been practiced in women of child-bearing age using chemotherapy. However, there is limited and conflicting evidence into its use in adolescents.

**Objectives:** 1) To describe clinical and demographic factors in the population of Royal Children's Hospital post-pubertal oncology patients receiving GnRHa between 2012-2022. 2) To describe the safety and efficacy of GnRHa treatment for menstrual suppression in these patients. 3) To assess reproductive status and return of menstrual function post oncology treatment in these patients.

**Results:** 72 post-pubertal adolescents who received at least one dose of goserelin were assessed. Median cumulative dose of goserelin received was 16.2 mg (range 3.6-86.4mg). 56.94% (n=41/72) patients opted for goserelin alone, and the remainder received goserelin with ovarian tissue cryotherapy or oocyte collection. Most participants (94.37%, n=67/71) had no complications while on goserelin, while 5.63% (n=4/71) experienced hot flushes. Ninety-three percent (n=62/66) attained amenorrhea during chemotherapy and 87.27% (n=48/55) had resumption of menses post chemotherapy, for a median 13-18 months. Prevalence of POI was 4.76% (n=3/69).

**Conclusions:** Goserelin appears to be safe and effective at suppressing menses during gonadotoxic treatment of teenagers. Administration of GnRHa was associated with a high rate of menstrual suppression and was well-tolerated, with low complication rates. Having higher cumulative doses (specifically >21.6mg) and/or not having a high actual infertility risk was associated with increased likelihood of return of menses.