

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.