Objective: To analyze the results obtained in cancer patients who received the same controlled ovarian stimulation protocol, started in two different moments of the menstrual cycle, the follicular or luteal phase. The stimulation was performed before cancer treatment in order to preserve fertility through oocytes cryopreservation.

Study design: The study is a retrospective analyses about 21 cancer patients occur to our centre, Department of Reproductive Medicine of University of Pisa, in order to preserve their fertility before cancer treatment. Patients are divided in two groups depending on menstrual cycle phase, follicular or luteal phase, at moment of first examination. Standard stimulation protocol with gonadotropins is administered in the follicular group, whereas in the second group we use GnRH (gonadotropin releasing hormone) antagonist before gonadotropins administration in order to have a rapid luteolysis. The outcome measures are number of days needed before starting procedure, duration of stimulation, cumulative dosage of gonadotropins number of oocyte retrieved and percentage of mature oocytes.

Results: Any difference has been showed between two groups if we consider days of stimulation, total amount of gonadotropins administered and the number of good mature quality oocytes retrieved. The real difference envolves the number of days needed to start the procedure, lesser in the luteal group.

Conclusions: This study suggests that oocytes can be obtained before cancer treatment irrespective of menstrual cycle phase without compromising the efficacy of procedure. Moreover starting ovarian stimulation anytime during menstrual cycle allows to patients to not postpone the beginning of cancer treatment. Different stimulation protocols, according to different kind of disease, are available in order to obtain the maximum results without any complication for patients.