A PROSPECTIVE CASE SERIES OF WOMEN WITH ESTROGEN RECEPTOR-POSITIVE BREAST CANCER: LEVELS OF TAMOXIFEN METABOLITES IN CONTROLLED OVARIAN STIMULATION WITH HIGH-DOSE TAMOXIFEN

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Controlled ovarian stimulation (COS) in women with estrogen receptor (ER)-positive breast cancer is potentially harmful because of the increase in serum estrogen levels. During COS for cryopreservation of oocytes or embryos, these women may receive high doses of tamoxifen (60 mg) to modulate the ER and prevent extra growth of estrogen responsive tumours during COS. However, it is unknown whether adequate serum concentrations of endoxifen, the most important metabolite of tamoxifen, can be reached.

The aim of this study is to evaluate whether the tamoxifen dose used in a tamoxifen–COS combined schedule for women with ER-positive breast cancer is high enough to reach endoxifen levels that are considered therapeutically effective to inhibit breast cancer growth.

Four women with ER-positive breast cancer who underwent a total of five tamoxifen-COS combined schedule for cryopreservation of oocytes were prospectively studied at the Academic Medical Centre, Amsterdam, the Netherlands. Throughout COS, blood samples were collected and tamoxifen and endoxifen levels were determined by a validated high-performance liquid chromatography tandem mass spectrometry assay.

Throughout the COS-cycle, tamoxifen and endoxifen levels showed a large variability between the women, with endoxifen levels during the whole period of ovarian stimulation varying between 3.96 and 41.0 ng/ml.

The average number of vitrified oocytes was 11 (range 5–14).

Therapeutically effective endoxifen serum levels can be reached when tamoxifen is used to counteract estrogen levels during COS for fertility preservation, but not in all women. Large variations of tamoxifen and endoxifen levels between the women were observed.