ORIGINAL ARTICLE

The use of levonorgestrel-releasing intrauterine system in prevention of endometrial pathology in women with breast cancer treated with tamoxifen

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ABSTRACT

Objective

To determine whether the use of levonorgestrel-releasing intrauterine system prevents endometrial pathology in women with breast cancer treated with tamoxifen or not.

Participants and methods

We did a randomized controlled trial on 121 women who required adjuvant therapy with tamoxifen for breast cancer. The women were randomly assigned to either group A (endometrial surveillance alone) or group B (endometrial surveillance before and after insertion of the levonorgestrel intrauterine system for two years). Endometrial surveillance was done by outpatient hysteroscopy and endometrial biopsy before and two years after the start of tamoxifen.

Results

The baseline assessment showed only benign uterine changes in all women (n=121).Women in group B had a much lower incidence of endometrial polyps than group A (1.8 % versus 16.1 % p value = 0.02). There was no statistical significant difference in the incidence of submucous fibroid between the two groups (6.4% in group A, 3.3% in group B , P value = 1.1). There was a higher incidence of bleeding in group B but this resolved to a baseline similar to that of group A.

Conclusion

The levonorgestrel-releasing intrauterine system has a protective action against the endometrial pathology caused by tamoxifen therapy in women with breast cancer. It reduces the occurrence of de novo endometrial polyps.

Keywords:

levonorgestrel-releasing intrauterine system, tamoxifen, breast cancer, endometrial polyps.

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INTRODUCTION

Tamoxifen a nonsteroidal triphenylethylene is the most commonly used hormonal treatment for breast cancer. It is highly effective in lowering the risk of recurrent or contralateral breast cancer regardless of menopausal status or clinical stage of disease. Tamoxifen is not a pure antioestrogen, since it has an oestrogenic effect in skeletal muscles, in lipid metabolism and in various gynaecological tissues. This unopposed estrogenic effect promotes occult uterine lesions to develop into polyps, fibroids and endometrial hyperplasia and causes a 2-3 fold increase in endometrial cancer.[1,2] The incidence of endometrial polyps, hyperplasia and endometrial cancer has been reported to be between 5 and 35%, 4.7-16% and 0.8-5% respectively.[3-5] These lesions commonly cause bleeding episodes which although benign in most cases require investigations to exclude malignant disease. These episodes compromise the quality of life of women taking tamoxifen and have big implications for health resources. Routine endometrial screening of women without symptoms on tamoxifen has been suggested but would not be cost effective and would be unlikely to lower mortality from endometrial cancer.[6] An alternative strategy to deal with tamoxifen –induced endometrial changes and the symptoms they cause is to render the uterine tissues unresponsive to estrogenic stimulation using progestagen. The use of systemic progestagens although established in prevention of the endometrial neoplastic changes associated with oestrogen replacement therapy, unfortunately causes several unwanted side effects leading to poor compliance and discontinuation of the treatment . There is also some concern that high dose systemic progestagens may blunt the efficacy of tamoxifen to prevent recurrence of breast cancer.[7] In addition some authors reported that systemic progestagens did not reverse the development of polyps, cysts and fibroids associated with tamoxifen.[8] Levonorgestrel-releasing intrauterine system delivers a high dose of progestagens in the uterine tissues with a low dose systemically thus decreasing the progestagenic side-