

## Original Research

### Evaluation of ER and PR expression among patients with postmenopausal bleeding

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#### ABSTRACT:

**Background:** To assess ER and PR expression among patients with postmenopausal bleeding. **Materials & methods:** Current research was planned for analyzing ER and PR expression among patients with postmenopausal bleeding. 200 subjects were evaluated. A Performa was made and detailed demographic and clinical details of all the patients was recorded. Samples were obtained and were subjected to immunohistochemical analysis. ER and PR expression was recorded. Microsoft excel sheet was used for evaluation of results. **Results:** ER expression was positive among glandular component in 85 percent of the patients while it was positive in stromal component of 86 percent of the patients. PR expression was positive among glandular component in 92.5 percent of the patients while it was positive in stromal component of 95 percent of the patients. Correlation of ER expression and PR expression with aetiopathogenesis of PMB yielded non-significant results. **Conclusion:** Patients with post-menopausal bleeding are accompanied by enhanced expression of ER and PR receptors.

**Key words:** PMB, ER, PR

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#### INTRODUCTION

Postmenopausal bleeding (PMB) is a symptom of possible gynaecological malignancy. According to present guidelines, women presenting with this symptom should be referred urgently to a team specializing in the management of gynaecological cancer, and be seen within two weeks of referral. Examination and investigation of these women should be able to exclude malignancy, while being acceptable to the patient and cost-effective. The gold standard modality of investigation to visualize the uterine cavity is hysteroscopy, but transvaginal scanning is recommended as the first-line investigation to select those who need further diagnostic evaluation. Hysteroscopy should be performed in women with a thickened endometrium on scan and women with recurrent episodes of bleeding despite negative scan findings. There have been very few studies that have examined women's knowledge, attitudes or concerns about PMB or its assessment.<sup>1-3</sup>

Postmenopausal bleeding (PMB) is defined as abnormal uterine bleeding occurring after 1 year of permanent cessation of menstruation resulting from loss of ovarian follicular activity. About 90%–95% of

postmenopausal women with endometrial cancer (EC) experience a vaginal bleeding, whereas about 10% of symptomatic postmenopausal women reveal an intrauterine malignancy.<sup>4-6</sup> Hence; the present study was conducted for analyzing ER and PR expression among patients with postmenopausal bleeding.

#### MATERIALS & METHODS

Current research was planned for analyzing ER and PR expression among patients with postmenopausal bleeding. 200 subjects were evaluated. A Performa was made and detailed demographic and clinical details of all the patients was recorded. Samples were obtained and were subjected to immunohistochemical analysis. ER and PR expression was recorded. Microsoft excel sheet was used for evaluation of results.

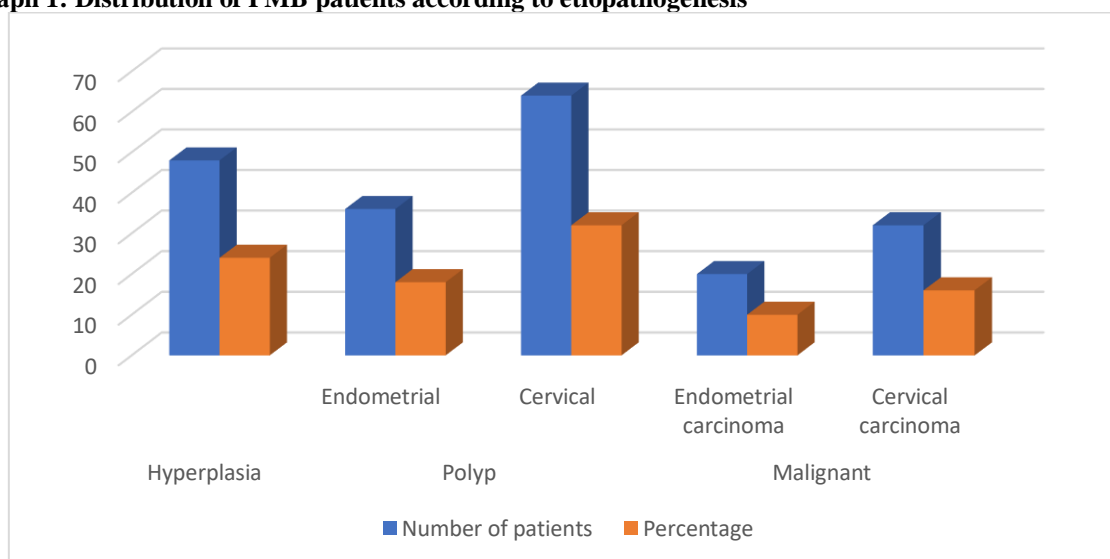
#### RESULTS

Etiopathogenesis was hyperplasia, polyp and malignancy in 24 percent, 50 percent and 26 percent of the patients. ER expression was positive among glandular component in 85 percent of the patients while it was positive in stromal component of 86

percent of the patients. PR expression was positive among glandular component in 92.5 percent of the patients while it was positive in stromal component of

95 percent of the patients. Correlation of ER expression and PR expression with aetiopathogenesis of PMB yielded non-significant results.

**Graph 1: Distribution of PMB patients according to etiopathogenesis**



**Table 1: ER and PR expression among patients with postmenopausal bleeding**

| Expression |                     | Positive |            | Negative |            |
|------------|---------------------|----------|------------|----------|------------|
|            |                     | Number   | Percentage | Number   | Percentage |
| ER         | Glandular component | 170      | 85         | 30       | 15         |
|            | Stromal component   | 172      | 86         | 28       | 14         |
| PR         | Glandular component | 185      | 92.5       | 15       | 7.5        |
|            | Stromal component   | 190      | 95         | 10       | 5          |

**DISCUSSION**

Postmenopausal bleeding (PMB) can be defined as uterine bleeding occurring at least one year after menopause. PMB is a common clinical problem in both general and hospital settings. The incidence of spontaneously occurring PMB in the general population can be as high as 10% immediately after menopause. PMB is often caused by abnormalities of the endometrium, whether they are benign or malignant. Of postmenopausal women with vaginal bleeding, 10%–15% have endometrial carcinoma. In contrast, the prevalence of endometrial polyps in patients with PMB and an increased endometrial thickness measured with transvaginal sonography (TVS) is estimated to be around 40%. Endometrial cancer is the most common malignancy of the female genital tract in developed countries. Unlike other malignancies, endometrial cancer often presents at an early stage when there is a possibility of curative treatment by hysterectomy. Survival decreases with increased staging and lower histological differentiation, thus accurate and timely diagnosis is important and should preferably be carried out by a safe, simple and minimally invasive method. Guidelines addressing PMB are therefore aimed at excluding cervical cancer, endometrial carcinoma or precancerous lesions of the endometrium.<sup>6- 10</sup>Hence; the present study was conducted for analyzing ER and

PR expression among patients with postmenopausal bleeding.

ER expression was positive among glandular component in 85 percent of the patients while it was positive in stromal component of 86 percent of the patients. PR expression was positive among glandular component in 92.5 percent of the patients while it was positive in stromal component of 95 percent of the patients. Correlation of ER expression and PR expression with aetiopathogenesis of PMB yielded non-significant results. Antunes et al, evaluated 390 postmenopausal females with endometrial polyps. Polypoid lesions were histologically classified as benign lesions (endometrial polyps and polyps with non-atypical simple hyperplasia or polyps with atypical complex hyperplasia) and premalignant and malignant lesions (polyps with atypical simple hyperplasia or atypical complex hyperplasia and carcinomatous polyps). ER and PR expression was evaluated by immunohistochemistry according to cell staining, intensity of nuclear staining and final score. The final score for receptor expression was compared between the benign and premalignant/malignant polyps. The prevalence of malignancy in endometrial polyps was 7.1% and was associated with postmenopausal bleeding. Only the final score for ER expression in the stroma of endometrial polyps was higher in the benign group than in the premalignant/malignant group, and

this difference was significant. However, no difference was identified in PR expression. In addition, the risk of malignancy in endometrial polyps was significantly higher when the expression of ER and PR was negative in the stromal component of the polyp ( $P < 0.01$ ). The malignancy of endometrial polyps was also associated with a low expression of stromal ER, however, PR expression did not show any association with the risk of malignancy.<sup>11</sup>

## CONCLUSION

PMB is accompanied by enhanced expression of ER and PR receptors.

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