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Research paper 16

A comparison of expression of ER, PR and p53 immunohistochemical stains between endometrial curetting/biopsy and resected endometrial carcinoma specimens

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Introduction and objective: The expression of immunohistochemical (IHC) stains is negatively affected by poor fixation. Different markers behave variably under suboptimal pre-analytical conditions with crucial diagnostic and therapeutic implications. The objective was to compare the expression of oestrogen-receptor (ER), progesterone-receptor (PR) and p53 in curettings/ endometrial biopsies (C/EB) with the corresponding hysterectomy in endometrial carcinoma (EC).

Method: Fifty cases of EC diagnosed by C/EB of which the resections received at the same centre, between 2017-2020 were retrieved from four tertiary care hospitals. IHC for ER, PR and p53 were performed on both C/EB and resection. Hormone-receptors (HR) were scored using Allred-score (ARS) (staining of >1% cells, ARS >3: positive). Strong nuclear staining in >80% or complete negative staining was considered mutant p53.

Results: 47/50 (94%) showed concordance of histological typing between C/EB and resections [endometrioid - EC:35/36 (97.2%), serous - EC:11/12 (91.6%), clear cell carcinoma:0/1 (50%), carcinosarcoma:1/1 (100%)]. ER and PR were positive in 33/50 (66%), 32/50 (64%) C/EB and in 28/50 (56%), 33/50 (66%) resections (ER, P=0.303; PR, P=0.209 >0.05), respectively. 46/50 (92%) showed concordance between ER and PR expression. ARS for ER/PR in C/EB was higher than in resections in 20 (40%) and 14 (28%) cases, respectively. The difference in ARS for ER between the two groups was statistically significant (ER, P=0.005; PR, P=0.133). The p53 expression pattern did not show a significant difference between C/EB and resections (P=0.480).

Discussion and conclusion: The under expression of HR in resections is best explained by poor fixation, although tumour heterogeneity may contribute. p53 expression appears to be unaffected. Immediate opening of the hysterectomy specimens allowing adequate fixation and preventing over fixation is crucial in preventing the loss of hormone receptor expression.

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