C-kit, Erb2, EGFR and AKT expression in uterine carcinosarcomas: An exploratory study

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Uterine carcinosarcomas (UCS) result in ~15% of uterine cancer-associated deaths. C-kit, ERBB2, EGFR and AKT expressions were studied by immunohistochemistry, in order to evaluate their roles in the pathogenesis of UCS. In addition, exons 9 and 20 of PIK3CA gene, a critical gene in the AKT pathway, have been sequenced with ABI 3130xl Genetic Analyzer. The cohort (n=37) was composed of twenty-three early-stage (I and II) and fourteen late-stage (III and IV) tumors. The majority of carcinomatous components were pure serous adenocarcinoma (n=13). Fourteen cases showed heterologous elements in the sarcomatous components. An immunostaining score (IS) ranging from 0 to (6+) was calculated for C-kit, EGFR and AKT by adding the score of intensity and the percentage of positively stained cells. ASCO/CAP guidelines were used to evaluate ERBB2. AKT was positive in 35/37 cases with an IS ranging from (2+) to (5+). ERBB2 immunostain was (3+) in one case. EGFR was positive in 21/37 cases. Only six cases showed low IS with C-kit. AKT was expressed significantly more in the early-stage disease than late-stage disease (p=0.016). The sarcomatous component had a significantly higher IS than that of epithelial component (p=0.006). The expression of AKT in the epithelial component was associated with the survival (p=0.026). In one case, H1047R mutation on PIK3CA gene has been detected in both carcinomatous and sarcomatous components. These results indicate that AKT pathway is important in pathogenesis of UCS. Further studies with larger cohorts are warranted to confirm the observed associations in this study.

Biography

Ozlen Saglam has gained her M.D. degree from Marmara University, Istanbul, Turkey in 1992. She did AP/CP residency at Henry Ford Hospital, Detroit, MI. She has oncologic surgical pathology and cytopathology fellowships. Currently she is a member of women’s health group in the department of pathology at Yale University. Her areas of interest are breast and gynecologic pathology. She is serving as an editorial board member for the Journal of Clinical and Experimental Pathology.

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