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Importance of histopathological diagnosis of apocrine carcinoma as estrogen/progesterone receptor-negative and androgen receptor-positive invasive ductal carcinoma, in order to avoid ineffective chemotherapy toward triple-negative breast cancer

Yutaka Tsutsumi

Fujita Health University School of Medicine, Japan

The author immunohistochemically defined apocrine-type carcinoma as ER-/PgR-/AR+ invasive ductal carcinoma (IDC) and analyzed the pathological significance of apocrine-type carcinoma as triple-negative breast cancer (TNBC). 440 breast cancers from 429 cases were immunostained for ER, PgR, AR, HER2, p53, Ki-67 and epidermal growth factor receptor (EGFR). The lesions included 58 *in situ* malignancies (with 13 apocrine-type lesions). Of 91 ER-negative IDCs, 44 (48%) belonged to apocrine-type carcinoma, and HER2 and p53 were overexpressed in 23 (52%) and 33 (75%), respectively. 22 (50%) were categorized as classical apocrine carcinoma. Among 281 non-apocrine IDCs, 30 (11%) were quadruple-negative (ER-/PgR-/AR-/HER2-) and 17 (6%) were hormone receptor-negative and HER2-overexpressed. IDCs in the TNBC category (n=51) were divided into triple-negative, AR-positive (apocrine, n=21) and quadruple-negative (non-apocrine, n=30). p53 overexpression was more frequent in the apocrine-type TNBC (18/21=86%) than in the non-apocrine type (14/30=46%) (P<0.05). Ki 67 labeling was higher in the non-apocrine (58%) than in the apocrine type (37%) (P<0.01). EGFR is consistently expressed in TNBC (16/16=100% in apocrine and 18/20=90% in non apocrine). AR should be added to the immunohistochemical panel, since apocrine-type IDC, resembling basal-like phenotypes, shows clinical behaviors different from the basal-like TNBC. In a separate study recruiting 27 TNBC patients, responses to preoperative chemotherapy were evaluated. The responder (n=13) consisted of 2 apocrine and 11 quadruple-negative cases, while the non-responder (n=14) contained 8 apocrine, 4 quadruple-negative and 2 spindle cell cases.

Biography

Yutaka Tsutsumi graduated from Keio University School of Medicine, Tokyo in 1976, and completed his PhD in 1982. He is the certified pathologist, the certified cytologist and the infection control doctor. He worked for the Department of Pathology, Tokai University School of Medicine, Isehara, Japan for 21 years, and in 2001 he moved as a Professor to the Department of Pathology, Fujita Health University School of Medicine, Toyoake, Japan. He has published more than 200 English-written papers in varied journals, and released plural single-authored textbooks and web sites in the field of pathology and infectious diseases.

tsutsumi@fujita-hu.ac.jp

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