

Resource Summary Report

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Protocol Information

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Summary: BackgroundRecently, neoadjuvant chemotherapy with docetaxel/cisplatin/5-fluorouracil (NAC-DCF) was identified as a novel strong regimen with a high rate of pathological complete response (pCR) in advanced esophageal cancer in Japan. Predicting pCR will contribute to the therapeutic strategy and the prevention of surgical invasion. However, a predictor of pCR after NAC-DCF has not yet been developed. The aim of this study was to identify a novel predictor of pCR in locally advanced esophageal cancer treated with NAC-DCF. Patients and MethodsA total of 32 patients who received NAC-DCF followed by esophagectomy between June 2013 and March 2016 were enrolled in this study. We divided the patients into the following 2 groups: pCR group (9 cases) and non-pCR group (23 cases), and compared gene expressions between these groups using DNA microarray data and KeyMolnet. Subsequently, a validation study of candidate molecular expression was performed in 7 additional cases. ResultsSeventeen molecules, including transcription factor E2F, T-cell-specific transcription factor, Src (known as “proto-oncogene tyrosine-protein kinase of sarcoma”), interferon regulatory factor 1, thymidylate synthase, cyclin B, cyclin-dependent kinase (CDK) 4, CDK, caspase-1, vitamin D receptor, histone deacetylase, MAPK/ERK kinase, bcl-2-associated X protein, runt-related transcription factor 1, PR domain zinc finger protein 1, platelet-derived growth factor receptor, and interleukin 1, were identified as candidate molecules. The molecules were mainly associated with pathways, such as transcriptional regulation by SMAD, RB/E2F, and STAT. The validation study indicated that 12 of the 17 molecules (71%) matched the trends of molecular expression. ConclusionsA 17-molecule set that predicts pCR after NAC-DCF for locally advanced esophageal cancer was identified.

Associated Publications: Fujishima H, Fumoto S, Shibata T, Nishiki K, Tsukamoto Y, Etoh T, Moriyama M, Shiraishi N, Inomata M (2017) A 17-molecule set as a predictor of

complete response to neoadjuvant chemotherapy with docetaxel, cisplatin, and 5-fluorouracil in esophageal cancer. PLoS ONE 12(11): e0188098. doi:

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