Green tea extract inhibited the tumor growth and invasiveness of 5-FU and MMC-resistant metastatic and remetastatic cell lines in a hamster pancreatic cancer model

Cíntia Yoko Morioka (University of Sao Paulo, Hospital Sírio Libanês, Advantage Health, Brazil and Toyama University, Japan), Seiji Saito (Toyama University, Japan), Akiharu Watanabe (Toyama University, Japan), Marcel Cerqueira Cesar Machado (University of Sao Paulo, Brazil), Jose Pinhata Otoch (University of Sao Paulo, Brazil), Frederico Perego Costa (Hospital Sírio Libanês Brazil), Cheng Ching Huang (Advantage Health, Advantage Business Consulting, Brazil)
C.Y., Morioka[a-f], J.L.V. Silva[a†], M.C.C. Machado[c], J.P. Otoch[c], D.S. Pereira Filho[d], F.P. Costa[e], S. Saito[f], A. Watanabe[f], C.C. Huang[b].

BACKGROUND. Polyphenolic compounds present in tea may reduce a risk of a variety of illnesses, including cancer.Research findings have shown the chemopreventive potential of tea polyphenols in cancer. Metastatic cells can be more aggressive than primary tumor cells. Sometimes, we have metastatic or remetastatic cells due to fail to chemotherapy regimens.
HYPOTHESIS.To clarify whether the same drugs, which could inhibit the tumor growth in the parental pancreatic cancer cell line, could inhibit in the metastatic and remetastatic pancreatic cancer ones, comparing the inhibition with green tea extract.
METHODS.HaP-T1:a cell line derived from nitrosamine induced pancreatic cancer,MS-PaS-1:a pancreatic metastatic cell line established from a "*return trip"* metastases of liver implanted tumor,which showed pancreatic metastases,and MS-PaS-2:a pancreatic remetastatic cell line established from metastases of MS-PaS-1 were used for the experiments. 5-Fluorouracil (5FU),Mytomicin C (MMC) and green tea extract (GTE) were used. MTT assay and MTT agarose assay were performed. In vitro chemoinvasion assay was done.
RESULTS.The inhibitory concentration (IC50) of 5-FU,which inhibited the HaP-T1,had to be increased in 50 folds to inhibit MS-PaS-1,and 100 folds to inhibit MS-PaS-2.MMC had to be increased 10 folds to inhibit MS-PaS-1,and 50 folds to inhibit MS-PaS-2.However, IC50 of GTE had to be increased 3 folds to inhibit MS-PaS-1,and 5 folds to inhibit MS-PaS-2. GTE inhibited the invasiveness of 3 cells lines in a dose dependent manner.
CONCLUSIONS. Green tea extract may be a new cancer strategy for pancreatic cancer because it could inhibit the tumor growth and invasiveness in metastatic and remetastatic cells as well as in primary tumor cells in small doses when compared to 5-FU and MMC, leading to the fact that side effects could be decreased. However,further studies will be necessary to elucidate.
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