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Abstract no.: OP-1

The Effects of Docetaxel with Insulin in Er (+) Breast Cancer Cells on Cellular Toxicity and Molecular Mechanism

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Background/Aim: Changes in glucose metabolism in the cells are one of the important issues investigated in many diseases, including cancer, in recent years. It is known that insulin, which is one of the primary elements in glucose regulation, plays an active role in the course of many diseases besides diabetics. We aimed to investigate the effects of insulin with docetaxel in the MCF-7 breast cancer cell lines as an ER (+) breast cancer model, in order to determine the changes in the use of insulin in combination with chemotherapy. Accordingly, the effects of different doses of insulin (2,5 to 20 µg / mL) in combination with different doses of docetaxel (32,5 to 130 nM) were compared to only with insulin or docetaxel treated cells. Untreated cells were accepted as controls. **Materials and Methods:** xCELLigence Real-Time Cell Analysis System was performed to measure cell toxicity and viability. Gene expression analysis with RT-QPCR was performed to understand the molecular mechanism underlying changes in the cells. **Results:** In our study, it was found that low-dose insulin with docetaxel was significantly cytotoxic compared to only docetaxel-treated, high-dose insulin with docetaxel-treated and insulin-only groups in the MCF-7 breast cancer cell line. RT-QPCR analysis was performed to investigate which molecular mechanisms triggered the cells when docetaxel with low dose insulin, which was more favorable than docetaxel alone. Accordingly, in the low dose insulin and docetaxel group, significant gene expression differences were found in the AKT1, BRCA1, CDH1, APAF1, MYC, CDKN1C, PTEN, EGFR, MAPK1 and BIRC5 genes according to the only docetaxel group. **Discussion and Conclusion:** Our study is the first study in Turkey that combines insulin with chemotherapeutics. Together with this study, it has been shown that low doses of insulin in combination with chemotherapeutics may positively affect disease progression in ER (+) breast cancer.

Key words: Insulin, docetaxel, MCF-7, breast cancer

Abstract no.: OP-2

Down-regulation of Annexin I is Correlated with Inflammatory Mediators in Colorectal

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Background: Colorectal cancer is one of the most common malignancies worldwide and the epidemiological studies report that colorectal cancer renders 9% of cancer related mortalities. The relation between inflammation and cancer has long been reported in several studies. In the last decades, the researchers have identified a new protein family called Annexins and among the members of the family, annexin-1 has been shown to have effects on inhibition of the synthesis of PLA2 and eikosanoids At present study, we aimed to evaluate the relation of Anx1 protein with inflammatory microenvironment of patients with colorectal cancer. **Materials and Methods:** 114 patients who were diagnosed as colorectal cancer and 98 healthy volunteers as control were included for this study. The mRNA expression of Annexin I and PLA2 were analyzed by Real Time PCR technique. The correlation analyses between Annexin I plasma levels and IL-6, cPLA2, sPLA2 and Interleukins were also performed. **Results:** Annexin I was downregulated in patient group with 0.3914 fold change when compared to control ($p<0.0001$). PLA2 mRNA expression was also lower than control ($p=0.001$). The decrease of Annexin I plasma levels in patient group was significantly correlated with the increase of interleukin-1α and interleukin-6 and prostaglandine-E2 levels ($p<0.05$). **Discussion:** The inflammation-cancer relation theory is based on the observations such the formation of tumors in chronic inflammation sites, the existence of inflammatory cells, chemokines and cytokines in tumor tissues, the activation and/or inhibition of same molecular targets or similar pathways in both inflammation and carcinogenesis processes. The studies have shown that some members of Annexin family display antiinflammatory effects which explained with a membrane-substrate interaction process since annexins compete with PLA2 on membrane binding process and thus decrease the consumption of substrate. We also observed a significant alteration on prostaglandine mRNA levels inversely correlated with the increase of plasma levels of prostaglandine E2 metabolites. **Conclusion:** At present study, the colorectal cancer has been evaluated for several inflammatory markers and Annexin I protein has been shown to contribute to the inflammatory state of colorectal cancer.

Key words: Annexin I, Inflammation, Colorectal Cancer, PLA_2, Interleukins

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Abstract no.: OP-3

Autophagy Analysis of Tumor-Fibroblasts Crosstalk on Biochips

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Background/Aim: Autophagy is an evolutionary conserved stress response mechanism which creates alternative sourc-