Investigation of the Cytotoxic and Antimetastatic Effect of Quetiapine Fumarate on Panceratic Cancer Cells

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Quetiapine fumarate is a typical antipsychotic agent from the dibenzothiazepine class and is approved by the US Food and Drug Administration for the treatment of psychotic symptoms such as schizophrenia and mania. Besides their use in psychiatric findings, there is also research on the use of antipsychotics in cancer treatment. Moreover, cell and animal models have been used to study the anti-cancer properties of antipsychotics. Antipsychotics have been shown to have potent anti-cancer properties that play a role in suppressing tumor growth, invasion, metastasis and reversal of chemoresistance. However, no studies have been encountered in the literature regarding its effect on pancreatic cancer cells. For this reason, we aimed to investigate the cytotoxic effect and antimetastatic potential oof quetiapine on pancreatic cancer cell lines (Panc-1 and MiaPaca-2 cell lines). Firstly, panceratic cell lines were treated five different doses of Quetiapine fumarate (150 - 75 - 39 -18 and 9 μM). Then, cell viability was determined using MTT assay. In addition, the effect of Quetiapine fumarate on metastatic character of pancreatic cell lines was analyzed with scratch and colony forming assay. As a result, it has been determined that, quetiapine fumarate had the cytotoxic effect on pancreatic cells in dose-dependent manner. Particularly, it has showed more toxic effect on Panc-1 cells at 48h. These results are important in terms of determining the suitability of active substances that have passed the phase stages, especially for pancreatic cancer use.