PCA-059

Anti-cancer effects of new Palladium complexes on gastric cancer cell line (AGS)

Shahram Hadizadeh[1- Presenter], Nowruz Najafzadeh[2- Corresponding], Mohammad Mazani[1]

Affiliations:

1. Department of Biochemistry, School of Medicine, Ardabil University of Medical Science, Ardabil, Iran
2. Department of Anatomical Science, School of Medicine, Ardabil University of Medical Science, Ardabil, Iran

Background and Aim: Chemotherapy drugs are used to treatment of various types of neoplasms. In this way, chemotherapy drugs have many side effects. Furthermore, in recent years, several attempts have been made to develop drugs based on platinum or palladium which have the low toxicity and is more sensitive to the drug-resistant diseases. In this study, we evaluated the effects of newly synthetized palladium complexes,namely[(phen)Pd(μ-al-bis-dtc)Pd(phen)](NO3)2(where alkylene bis dithiocarbamate, al-bis-dtc= propylenebisdithiocarbamate (pn-bis-dtc, 1); Butylene bis dithiocarbamate (bu-bis-dtc, 2); octylenebis dithiocarbamate (oc-bis-dtc, 3) and phen=1,10-phenanthroline) as anticancer drugs on gastric cancer cell line (AGS).

Methods: In this study, gastric cancer cell line (AGS cell line) was purchased from Pasteur Institute of Iran and cultivated in RPMI 1640 and then the cytotoxic effects of various concentrations of newly synthesized complexes were evaluated by colonogenic assay & acridine orange/ ethedium bromide staining.

Results: The results of this study showed that the new complexes have different effects in concentration-dependent manner so complexe1≥ 0.1, complexe2≥ 0.05 and complexe3≥ 1 μg /ml lead to cell death by apoptosis and necrosis. Comparing the number of colonies formed after treatment with concentrations of palladium complexes showed significant differences compared with control (P value<0.001).

Conclusion: In this study, we have shown that the use of low concentrations of palladium complexes increases apoptosis and necrosis, also, reducing the number of cell colonies.

Keywords: AGS, Colony assay, Apoptosis, Necrosis