Investigation of combined action of cis-DDP and irradiation to HeLa cells in vitro

The aim of this work was to investigate the cytotoxic effect of ionizing irradiation, cis-diamminedichloroplatinum (cis-DDP) and their combination to cervix carcinoma HeLa cell line. HeLa cells were seeded and grown in nutrient medium, RPMI 1640 with addition of 3 μM L-glutamine, 10% of heat inactivated fetal bovine serum and antibiotics. Target cells were: a) Irradiated by X rays with 2 Gy daily during four days, and on the fifth day cells were additionally treated with 7 Gy (VARIAN X-6MV); b) Incubated with 0.33 μM cis-DDP; and c) Incubated with 0.33 μM cis-DDP and irradiated with the same way as described in a). Total dose applied on cells was 15 Gy. The cytotoxic effect was determined using trypan blue dye exclusion test, 24 hours and ten days after the end of the treatment. Result obtained 24 hours after the cell treatment showed that irradiation induced a direct toxicity to 17% of HeLa cells. There was no direct toxicity of applied cis-DDP concentration, although cell growth was totally inhibited. The cytotoxic action of combined treatment was 52% but treated and survived cells were giants. However, on day 10 after the end of cell treatment, the giant cells were not seen in any sample. In flasks with cells treated with cis-DDP the number of cells was reduced to almost one third of the number in control samples. Number of cells in flasks treated with irradiation alone was negligibly low in comparison to controls and samples with cis-DDP treated cells. Moreover it was at least 2.7 times lower from the number of cells where combination of cis-DDP and irradiation was applied. In conclusion, results from this experiment did not show any enhancement in toxicity of combined cis-DDP and irradiation treatment, in relation to any single treatment of HeLa cells. Therefore good results of combined treatment in the relation to the irradiation alone, seen in patients in ongoing clinical trials, seem not to be related with direct toxicity of applied combined treatment to malignant cells. It could be searched in other kinds of antitumor activity.

Diet and gastric cancer

The aim of this case-control study, conducted in Serbia from 1993 to 2000, was to investigate whether diet is associated with the development of gastric cancer. The case group consisted of 135 patients with histologically confirmed gastric cancer and the control group of 135 (patients with orthopedic diseases and injuries). Patients and controls were individually matched by age (2 years), sex and place of residence. In the analysis we used multivariate logistic regression and found following factors to be independent risk factors for gastric cancer: More frequent consumption of saturated milk odds ratio (OR) = 1.45, 95% confidence interval (95% CI) = 0.99 - 2.16; Mutton, lamb, and veal (OR = 2.46, 95% CI = 1.11 - 5.47); Sugar (OR = 2.13, 95% CI = 1.43-3.18); Semi-white bread (OR = 2.09, 95% CI = 1.25-3.50), and salting food (OR = 5.72, 95% CI = 2.63-12.42). Factors appeared to be protective for cancer of the gastric were more frequent consumption of margarine (OR = 0.41, 95% CI = 0.25 - 0.69), other cheeses (OR = 0.47, 95% CI = 0.29 - 0.77) and fish (OR = 0.39, 95% CI = 0.19-0.76).