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P67. CYTOTOXICITY OF CADMIUM CHLORIDE IN VERO CELLS AND PROTECTIVE EFFECTS OF GLUTATHIONE, N-ACETYLCYSTEINE AND CATALASE

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Cadmium is an environmental pollutant with well-known nephrotoxic effects. The present study was designed to evaluate the possible time- and dose-dependent cytotoxic effects of cadmium chloride ($CdCl_2$) to African green monkey kidney normal cell line (Vero cells). The cultured cells were exposed to 11 different concentrations of cadmium chloride ranging from 0.05 to 300 µM for 24, 48 and 72 h and cytotoxicity was determined by MTT assay. Possible protective effects of glutathione (GSH), N-acetylcysteine (NAC), and catalase against cytotoxic effect of CdCl2 were also tested. Our results revealed that the effect of CdCl2 on viability of Vero cells was concentration- and time-dependent. Exposure of cells to ≥40 µM CdCl2 for all incubation periods caused significant decrease in cell survival. Pretreatment of cells with GSH, NAC or catalase for 4 h provided protection against CdCl2-induced cytotoxicity following 48 h. Spectrofluorometric assessment of the level of reactive oxygen species (ROS) using a fluorescent probe 2′,7′-dichlorofluorescein-diacetate (DCFH-DA) indicated production of ROS in this system. The data obtained in this study suggest that, in accordance with literature, CdCl2-induced cytotoxicity is related to oxidative stress.