ABSTRACT

Ovarian cancer is the fifth most common cancer and the most frequent cause of the death among gynaecological cancers in population of Czech women. The latest data from the National oncological register of Czech Republic show the incidence 20,64 and mortality 12,58 in 100 000 women (2010). A serious problem is represented by a late diagnosis of cancer, when the disease is diagnosed in the late stadium and finally this causes high mortality from this kind of cancer. Most complicated factors include high heterogenity of the disease, frequent apperance of resistance to cytostatics and low individualization of chemotherapy.

In cooperation with a Clinic of gynaecology and obstetrics, Faculty hospital in Hradec Kralove, we have tested solid tumors and ascites samples of patients with ovarian cancer diagnosis to predict answers to chemotherapy within *in vitro* conditions. A panel of six cytostatics (cisplatin, paclitaxel, carboplatin, gemcitabine, topotecan, etoposide), which are also used in primary chemotherapy of ovarian cancer, has been tested. We have also used a model system, a human ovarian cancer cell line A2780, co compare the reactivity to tested cytostatics.

Our results show the highest sensitivity of cells isolated from clinical samples of solid tumors and ascitic fluid to topotecan and cisplatin. Most frequently there has been discovered a resistance to carboplatin whereas only a marginal reactivity to paclitaxel has been revealed. But in fact a standard scheme of primary chemotherapy of ovarian cancer includes just administration of platinum derivative, carboplatin or cisplatin, in a combination with paclitaxel.

A model human ovarian cancer cell line A2780 has showed a higher sensitivity to tested cytostatics. These cytostatics inhibited proliferation and induced a cell death depending on their concentration and time of action. The most effective cytostatic was evaluated topotecan.