Abstract

Ovarian carcinoma (O.C.) represent a group of various disease entities derived from ovaries. The most common malignant gynaecological cancer is high-grade serous ovarian carcinoma (HGSOC). HGSOC is associated with a high mortality rate due to its aggressive behaviour and insufficient early-stage detection. The survival rate has not been significantly improved since 1970s. The most effective treatment of HGSOC patients is by cytoreductive surgery (for early stages I/II) and followed by platinum-based chemotherapy (HGSOC presented in advanced stage III/IV) combined with taxane or potentially with PARP inhibitors (for BRCA1/2 mutation carriers). Multiple factors affect the patient's outcome and prognosis. Chemoresistance, molecular mutational patterns, stage at presentation of HGSOC are one of the clinical challenges contributing to common relapses even though patients often initially respond well to the HGSOC chemotherapy. This thesis overviews the fundamental biology of HGSOC, the major obstacles in clinical management and its improvements by implementing of multitherapy approaches.

Key words: CA-125; platinum−based chemotherapy treatment; homologous recombination deficiency; ovarian carcinoma; resistance; *Tp53;* mortality; survival rate