DEVELOPING INFRASTRUCTURE FOR MOLECULAR PROFILING FOR ALL IN OVARIAN CANCER (DEMO)

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Introduction/Background Cytoreductive surgery (CRS) associated with hyperthermic intraperitoneal chemotherapy (HIPEC) is an essential treatment for peritoneal carcinomatosis (PC). Cisplatin is known to cause acute renal failure (ARF) after systemic or intraperitoneal administration. After accumulation, it can lead to nephrotoxicity in one-third of intravenous prescriptions and up to 40% of ARF for the IP route, with progressive and irreversible chronic renal failure. In addition to preoperative hyperhydration, sodium thiosulfate (ST) is a well-known pharmaceutical agent and has been used in the prevention of Cisplatin-induced toxicity, particularly renal toxicity. The objective of our study was to evaluate the interest in preoperative intravenous hydration alone or in combination with ST to prevent nephrotoxicity induced during intraperitoneal Cisplatin in patients who underwent CRS with HIPEC.

Methodology Retrospective single-tertiary-center analysis of all consecutive patients treated by CRS with Cisplatin-based HIPEC between January 01, 2015, and July 30, 2020. All types of PC were included. There were three consecutive periods of study corresponding to 3 different treatments. A first group was treated with preoperative hyperhydration alone (group 1 – PHH), a second one with preoperative hyperhydration (3L/24 h of Ringer-Lactate) with the addition of ST (group 1 – PHH + ST), and a third one with ST alone (group 3 – ST).

Results Period study included 230 consecutive patients underwent. Median age was 59 years (interquartile range 49 – 68 years), with 76% women. Higher rate of complete cytoreduction (CC0) were achieved in PHH + ST and ST alone (92% and 97%, respectively, vs 77%, p < 0.001). PHH + ST and ST alone had better postoperative renal function with acute injury compared to group 1 (p<0.001).

Conclusion Supporting informed decision making for all and establish auditable biopsy pathways are crucial for the implementation of molecular profiling to improve ovarian cancer care.

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Conclusion In addition to the nephroprotective benefit, ST also appears to be associated with better cytoreduction results. Hyperhydration does not provide any additional benefit.

UNRESECTABLE PERITONEAL METASTASES FROM STAGE III OVARIAN CANCER TREATED WITH BIDIRECTIONAL APPROACH OF PRESSURIZED INTRA PERITONEAL AEROSOL CHEMOTHERAPY (PIPAC) AND SYSTEMIC CHEMOTHERAPY MAY LEAD TO SECONDARY COMPLETE CYTOREDUCTIVE SURGERY: A PILOT STUDY

Abstract 2022-RA-1064-ESGO

Introduction/Background Ovarian cancer (OC) is the leading cause of death among women diagnosed with gynaecological cancer. The natural course of the disease is progression to peritoneal metastases (PM), a high rate of platinum chemoresistance, and a low overall survival rate, with no effect of a screening system. This background explains the interest in locoregional treatment of peritoneal disease which has shown a benefit in terms of overall and progression-free survival for selected patients treated with complete cytoreductive surgery. This pilot study aimed to investigate the feasibility and safety of secondary complete cytoreductive surgery after a bidirectional treatment of Pressurized IntraPeritoneal Chemotherapy (PIPAC) and systemic chemotherapy.

Methodology A retrospective single-tertiary canter pilot study with unresectable stage III serous ovarian cancer patients treated by induction chemotherapy based on carboplatin and paclitaxel combined with a minimum of 3 PIPAC, between May 01, 2019 and October 30, 2021. All patients had a diagnostic laparoscopic exploration. After 3 cycles of chemotherapy PIPAC was initiated if unresectable disease without extraperitoneal metastases including loco-regional lymphadenopathy. Resectable disease after 3 cycles of bidirectional treatment was eligible for CRS. Hyperthermic IntraPeritoneal Chemotherapy (HIPEC) was done after complete CRS without the residual disease.

Results All patients completed at least 3 PIPAC (n=7, 89%) in a bidirectional approach, and one patient had completed 4 PIPAC. Most patients (n=6, 75%) were secondarily treated by CRS-HIPEC. In two patients the disease remained unresectable and had to be changed for second-line chemotherapy. Median PCI during surgery was 17 (IQR 2.3). The postoperative course was uneventful regarding severe complications.

Conclusion PIPAC is safe and feasible in a neo-adjuvant intent for unresectable ovarian cancer patients and may lead to complete CRS.

METABOLOMICS SHOWED LSR PROMOTED LIPID METABOLISM IN EOC

Abstract 2022-RA-1066-ESGO

Introduction/Background Previously, we identified lipolysis-stimulated lipoprotein receptor (LSR) as a new target of epithelial ovarian cancer (EOC), and we reported anti-tumor effect of our newly developed monoclonal antibody (mAb) against LSR-positive EOC cells in vitro and in vivo. We also demonstrated that in high-fat diet (HFD) mouse, anti-LSR mAb showed strong anti-tumor effect. In this study, we performed metabolomic analysis using HFD mouse serum and analyzed metabolic pathway of EOC via LSR.

Methodology We established HFD mouse model and evaluated the tumor growth of LSR-positive EOC cell line and antitumor effect of anti-LSR mAb in this model. Moreover, we obtained serum samples from normal-diet (ND) and HFD mouse, and performed metabolomic analysis. Finally, we analyzed lipid metabolites profile of HFD mouse compared to ND mouse.

Results Tumor growth of LSR-positive EOC cells was significantly promoted in HFD mouse (p < 0.05) and anti-LSR mAb showed stronger anti-tumor effect in HFD mouse than that in ND mouse (57.2% vs. 26.6%, respectively). Metabolomic analysis using HFD and ND mouse serum detected 210 metabolites and The Human Metabolome Database provided comprehensive information of 83 metabolites. Principal component analysis and cluster analysis using these data showed obviously different metabolic properties between ND and HFD mouse. Partial Least Squares-Discriminant Analysis showed significantly high score of lipid metabolites including α-Tocopherol and cholesterol.

Conclusion Metabolomics showed the activation of lipid metabolism in HFD mouse and suggested that LSR contributed tumor growth via lipid metabolism.