

YUTAKA YONEMURA

Kishiwada Tokushukai Hospital,
Japan



Development of peritoneal metastasis from gastric cancer and rationale of treatment according to the mechanism

Abstract:

In my presentation, the normal structure of the peritoneum, and new concepts of the mechanisms of peritoneal metastasis (PM). The structure of the peritoneum was studied by a double-enzyme staining method, using alkaline-phosphatase and 5'-nucleotidase, scanning electron microscopy, and immunohistological methods. The fundamental structure of peritoneal surface consists of three layers, mesothelial cells and basement membrane (layer 1), macula cribriformis (MC)(layer 2), and submesothelial connective tissue containing blood vessels and initial lymphatic vessels, attached to holes in the MC (layer 3). Macro molecules and macrophages migrate from mesothelial stomata to the initial lymphatic vessels through holes in the MC. These structures are characteristically found in the diaphragm, omentum, paracolic gutter, pelvic peritoneum, and falciform ligament. The first step of PM is spillage of cancer cells (peritoneal free cancer cells; PFCCs) into the peritoneal cavity from the serosal surface of the primary tumor or cancer cell contamination from lymphatic and blood vessels torn during surgical procedures. After PFCCs adhere to the peritoneal surface, PMs form by three processes, i.e., 1) trans-mesothelial metastasis, 2) trans-lymphatic metastasis, and 3) superficial growing metastasis. Because the intraperitoneal (IP) dose intensity is significantly higher when generated by IP chemotherapy than by systemic chemotherapy. IP chemotherapy has a great role in the treatment of PFCCs, superficial growing metastasis, trans-lymphatic metastasis and early stage of trans-mesothelial metastasis. However, an established trans-mesothelial metastasis has its own interstitial tissue and vasculature, which generate high interstitial pressure. Accordingly, it is reasonable to treat established trans-mesothelial metastasis by bidirectional chemotherapy from both IP and systemic chemotherapy.

Biography

In the Peritoneal Surface Malignancy Center of Kishiwada Tokushukai Hospital, Ikeda Hospital, and Kusatsu general Hospital, we mainly treat patients with peritoneal metastasis, distant lymph node metastases, hematologic metastasis in liver and lung from gastrointestinal and gynecological malignancies. Treatment strategy is a comprehensive treatment consisting of cytoreductive surgery, perioperative chemotherapy, RFA, and hepatic artery infusion chemotherapy.