Sixth International Joint Meeting on THORACIC SURGERY

Barcelona - 20th, 21st and 22nd November 2024
Auditorio Foment del Treball Nacional. Barcelona (Spain)

11th International Meeting on General Thoracic Surgery
Clínic Barcelona | Universitat de Barcelona | Hospital Universitari Sagrat Cor

5th Meeting of the Thoracic Oncology, Thoracic Surgery, Techniques & Transplant, Respiratory Nursing and Respiratory Physiotherapy Areas of the Spanish Society of Pneumology and Thoracic Surgery (SEPAR)
Sociedad Española de Neumología y Cirugía Torácica (SEPAR)

10th International Workshop on Surgical Exploration of the Mediastinum and Systematic Nodal Dissection
Hospital Universitari Mútua Terrassa | Universitat de Barcelona

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3rd Joint Meeting of the Spanish Society of Thoracic Surgery (SECT)
SECT Sociedad Española de Cirugía Torácica

30th Congress of the "Asociación Iberoamericana de Cirugía Torácica" AIACT

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CYTOREDUCTIVE SURGERY AND HITHOC

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Cytoreductive surgery (CRS) and hyperthermic intrathoracic chemotherapy (HITOC) represent an innovative approach within the multimodal treatment of pleural mesothelioma, aimed at improving survival rates and reducing the recurrence of pleural mesothelioma and other cancers. A systematic review of clinical studies has demonstrated improved overall survival rates and prolonged disease-free intervals, particularly in patients with malignant pleural mesothelioma. The median survival for patients treated with CRS and HITOC can exceed 30 months, compared to a median survival of 12 months with chemotherapy alone.

The primary goal of CRS is to reduce the tumor burden to a minimal residual disease state. Since complete removal of pleural mesothelioma is difficult, maximal CRS is typically defined as the removal of 90-95% of the visible tumor. The extent of resection can vary from pleurectomy/decortication to an extensive extrapleural pneumonectomy, depending on the stage of the disease and the patient's condition. The effectiveness of CRS is directly correlated with the completeness of tumor resection: the less residual tumor remains after surgery, the better the prognosis for the patient.

Following CRS, HITOC is administered as a single-session treatment into the thoracic cavity to target microscopic residual cancer cells that were not visible or accessible during surgery. The chemotherapy agents are heated to approximately 40-42°C (104-107.6°F) and circulated within the pleural space for 60 to 120 minutes. The heat enhances the cytotoxic effects of the chemotherapy, increasing drug penetration into tissues and improving its effectiveness against cancer cells while minimizing systemic toxicity. Hyperthermia has been shown to directly damage cancer cells, impair their repair mechanisms, and inhibit metastatic spread. Additionally, it enhances drug perfusion into tissues, allowing for higher local concentrations without increasing systemic side effects.

Common chemotherapy agents used in HITOC include cisplatin, mitomycin C, and doxorubicin. Cisplatin, in particular, is widely used due to its potency against a variety of tumors. However, HITOC is typically applied as a single-session treatment immediately following cytoreduction, with protocols varying depending on the institution and the patient's condition.

In conclusion, CRS combined with HITOC represents an aggressive but effective treatment modality for cancers confined to the pleura. It offers hope for patients with previously intractable diseases by controlling disease progression, extending survival, and improving the quality of life for selected patients.

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