Surgical Perspectives for Perioperative Chemoimmunotherapy

Hong Kwan Kim

Organization Sungkyunkwan University, Samsung Medical Center, Department of Thoracic and Cardiovascular Surgery
Current Position Professor

Educational background

2011	Ph.D., Seoul National University College of Medicine Graduate School, Seoul, Republic of Korea
2006	M.A., Seoul National University College of Medicine Graduate School, Seoul, Republic of Korea
2005	Certificate of Educational Commission for Foreign Medical Graduates
2003	Certificate of Thoracic and Cardiovascular Surgery, Board of The Korean Society for Thoracic and Cardiovascular Surgery
1998	B.A., Seoul National University College of Medicine, Seoul, Republic of Korea

Professional experience

2023-2025	Director, Lung and Esophageal Cancer Center,Samsung Medical Center Chief, Lung Transplantation Team, Samsung Medical Center
2019-2025	Chief, Division of Thoracic Surgery, Department of Thoracic and Cardiovascular Surgery, Sungkyunkwan University School of Medicine
2019-2025	Professor, Department of Thoracic and Cardiovascular Surgery, Sungkyunkwan University School of Medicine
1999-2003	Residency, Seoul National University Hospital
1998-1999	Internship, Seoul National University Hospital

Despite progress in surgical techniques, adjuvant chemotherapy, and targeted therapy, long-term survival for patients with stage II–III non-small cell lung cancer (NSCLC) remains unsatisfactory. The introduction of immune checkpoint inhibitors (ICIs) has transformed the treatment of advanced NSCLC, offering durable responses and long-term survival benefits for some patients. This achievement has prompted rapid investigation of ICIs in earlier disease stages, including neoadjuvant and perioperative settings.

Multiple phase II and III trials have demonstrated the feasibility and effectiveness of neoadjuvant chemoimmunotherapy (nCIT). The landmark CheckMate 816 trial proved that the combination of nivolumab and platinum-doublet chemotherapy increased pathological complete response and event-free survival compared to chemotherapy alone. Subsequent perioperative trials, including KEYNOTE-671, AEGEAN, and CheckMate 77T, have confirmed the importance of ICIs combined with chemotherapy across various populations. Meanwhile, early real-world experiences, especially from Asia, indicate that nCIT may pose unique challenges in surgical planning, technical complexity, and postoperative care.

Despite these advances, many unmet needs remain. There is no consensus on the best regimen, duration, or order of perioperative immunotherapy. The role of biomarkers such as PD-L1 expression, tumor mutational burden, and circulating tumor DNA is still unclear. Additionally, questions continue regarding how to treat patients with EGFR- or ALK-driven tumors, those with incomplete responses, and individuals who become unresectable after induction therapy. From a surgical perspective, the impact of increased fibrosis, nodal downstaging, and changes in hilar anatomy must be carefully considered during operative planning.

This presentation aims to give a comprehensive overview of current evidence regarding nCIT in resectable NSCLC. It will summarize key clinical trials and real-world data, discuss surgical and pathological implications, and identify major controversies and future research priorities.