416. BIOMARKER IDENTIFICATION FOR CHEMOTHERAPY RESPONSE PREDICTION IN BARRETT’S CARCINOMA PATIENTS BY AN INFLAMMATORY-RELATED PLASMA PROTEIN PROFILING

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The prognosis of patients with advanced esophageal adenocarcinoma (EAC) is still poor, which is partly due to a limited chemotherapy response. About 50% of these patients, treated with neoadjuvant chemotherapy, are non-responders, which might be influenced by inflammation and immunological conditions.

EAC patients (n = 24) were characterized prospectively in a single center study for gender (female n = 4; male n = 20), age (median 64; range 43-77 years), TNM-classification, and pathological response rate (PRR) to neoadjuvant chemotherapy. PRR was assessed according to the Schneider classification (Grade 3 + 4 total + subtotal remissions were defined as good responders). A comprehensive high performance inflammation biomarker panel, including 92 inflammatory-related proteins, was conducted in plasma (OLINK, Uppsala, Sweden). Blood was taken before neoadjuvant chemotherapy induction (baseline) and after chemotherapy completion. EAC cell lines (OE33, OE19, SK-GT-4, FLO-1) were treated with the chemokine (CX-C motif) ligand 1 (CXCL1) for 48 h.

Nineteen inflammatory-related proteins were altered significantly after neoadjuvant chemotherapy completion. The five most affected proteins were TNF, IFNγ, CXCL1, FLT3L, and PD-L1. Pathway analyses revealed an activated IL-10- and IL-18-signalling pathway, after neoadjuvant chemotherapy. A PRR of 3 and 4 correlated significantly with higher baseline CXCL1 values. CXCL1 treatment led to decreased proliferation rates in two (OE19 and SK-GT-4) of the four investigated EAC cell lines by 25-50%.

Values for GDNF were higher, while values for TRAIL and TNFRS9 were lower in patients’ plasma with a good PRR after chemotherapy completion as compared to patients with a poor PRR. Multiplex profiling of inflammatory-related biomarkers revealed an activated interleukin signaling, (IL-10- and IL-18 pathway) after neoadjuvant chemotherapy. Inflammatory plasma proteins as CXCL1 could be an interesting candidate to predict PRR and to identify patients, who will benefit from neoadjuvant chemotherapy. However further prospective studies are needed to validate our first observations.

417. ROBOT-ASSISTED MINIMALLY INVASIVE ESOPHAGECTOMY WITH UPPER MEDIASTINAL LYMPHADENECTOMY

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We started robot-assisted minimally invasive esophagectomy (RAMIE) in 2012 using da Vinci S. After the reimbursement in the national insurance system in 2018, RAMIE has been indicated as an institutional standard surgery simply depending on the da Vinci availability. Our early series of 45 RAMIEs showed significantly less postoperative morbidity (p = 0.03) mainly due to less pulmonary complication (p = 0.006) compared to conventional minimally invasive esophagectomy using propensity score matching (Ann Surg Oncol. 2020).

This study aims to retrospectively evaluate the feasibility of RAMIE and to demonstrate our standardized RAMIE with updated data.

Our surgical technique is as follows. A patient is placed in a prone position with both lung ventilation with 8-10 mmHg artificial pneumothorax. In the upper mediastinum, the thoracic duct is usually preserved unless there is tumor invasion. Then, the tracheoesophageal arteries flowing into the visceral sheath over the recurrent laryngeal nerve (RLN) are divided first and RLN is isolated laterally. Then, the lymphatic tissue is dissected from the trachea. This procedure is identical on both sides of RLN nodal dissection.

By January 2022, 89 RAMIEs (S: 6 cases and X: 83 cases) were performed. Thoracic operation time was 348 min and console time was 296 min. Intraoperative blood loss was 80 g and the number of harvested thoracic nodes is 23. There was no conversion from RAMIE to MIE nor to open procedure. Overall severe postoperative morbidity (Clavien-Dindo Grade 3 or higher) was 17% (15/89) and clinically relevant postoperative recurrent laryngeal nerve palsy (Clavien-Dindo Grade 2 or higher) was 10% (9/89). There was no postoperative mortality. RAMIE was safe and feasible.

418. STRATEGIES FOR OLIGOMETASTATIC AFTER CURATIVE RESECTION OF ESOPHAGEAL CANCER

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The recurrence rate in patients with esophageal cancer who are treated by curative esophagectomy is reported to be 29-43%. Recently, the concept of oligometastasis recurrence (OLR) has gained attention.

To clarify the relationship between treatment strategy and prognosis of patients with OLR after esophagectomy. We included 124 patients with recurrence among 446 patients who underwent esophagectomy for esophageal cancer.

OLR was defined as five or fewer recurrences in a single organ or five or fewer recurrences in a single lymph node. Patients were divided into two groups: OLR and non-OLR group. Recurrence within 6 months after surgery was defined as early recurrence. The relationship between early recurrence and prognosis was examined. We focused on liver and lung metastases and examined treatment methods and prognosis.

Of the recurrence patients, 40 (32%) were in the OLR group and 84 (78%) were in the non-OLR group. The overall survival was 49 months in the OLR group and 17 months in the non-OLR group (p < 0.001). Survival after recurrence was 26 months in the OLR group and 6 months in the non-OLR group (p < 0.001). In comparison of the early relapse and non-early relapse groups, both OS and survival after recurrence tended to be worse in the early relapse group (p = 0.05). The prognosis was better in the lymph node recurrence group and worse in the liver recurrence group (p = 0.05).

Oligometastasis is related to prognosis in patients with recurrence after esophagectomy, and patients with early recurrence or liver recurrence may have a poor prognosis.

420. IDENTIFICATION AND CLASSIFICATION OF TUMOR CELLS IN PATIENTS WITH BARRETT’S CARCINOMA BY HYPERSONSPECTRAL IMAGING (HSI)

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Hyperspectral imaging (HSI), as recently applied in medicine, is a novel technology combining imaging with spectroscopy. It might be used to identify, classify and discriminate malignant and non-malignant cells of histopathologic specimens. HSI allows the determination of a spectrum by curative esophagectomy is reported to be 29-43%. Recently, the concept of oligometastasis recurrence (OLR) has gained attention.

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After surgical resection, specimens (n = 96) of Barrett’s cancer were fixed in 4% formaldehyde and slices were conducted (3 μm), which were stained with hematoxylin and eosin (HE). Differences in the absorbance of squamous...