The incidence of esophageal adenocarcinoma (EAC) has increased in last decades. Regardless to improved perioperative chemotherapies and surgical approaches, the prognosis for EAC in advanced stages is poor. CD82 is a tumor suppressor gene, and its downregulation correlates with invasive growth, metastases formation and advanced clinical stages. CD82 might influence the Wnt/ß-catenin signaling pathway.

We used an in vitro Barrett’s esophagus cell culture model, represented by esophageal squamous cell epithelium (EPC1, EPC2), metaplasia (CP-A), dysplasia (CP-B) and esophageal adenocarcinoma (OE33, OE19, SKGT4, FLO1). Antisense LNA Oligonucleotides (GapmeRs, Qiguan) were used to achieve a transient knockdown of CD82 in OE33 and OE19 cells. mRNA and proteins were analyzed by q-RT-PCR and western blot analysis, respectively. A fluorescence antibody specific to CD82 was used for flow cytometry analysis. Proliferation assay, colony formation assay and bender chamber assay were performed after CD82-knockdown to further analyze cell proliferation, cell growth and survival, colony forming and cell migration.

CD82 was expressed in all investigated cell lines by flow cytometry with a significant overexpression in OE19 and FLO1 cells. A stable downregulation of CD82 was achieved in OE33 and OE19 cells. Proliferation assays showed a significantly higher proliferation rate at 72 hours after CD82-knockdown in OE33 cells. A significantly higher mRNA expression of vimentin was observed after CD82-knockdown in OE33. Colony formation assay showed a significantly higher colony count after CD82-knockdown in both cell lines. Cell migration was increased after CD82-downregulated in OE33 and OE19 cells.

CD82 might influence the expression of mesenchymal marker proteins, cell migration abilities and the process of colony forming and thus enhance the metastatic potential of OE33 and OE19 cells. Low expression of CD82 could alter metastasis and cancer progression but further molecular characterizations are needed to elucidate the impact on carcinogenesis of EAC.

429. DETECTION OF MOLECULAR RESIDUAL DISEASE (MRD) USING MATCHED TUMOR-MARGIN SEQUENCING IN EARLY STAGE ESOPHAGEAL SQUAMOUS CELL CARCINOMA

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Residual disease is one of the main sources of recurrence in post-surgical esophageal squamous cell carcinoma (ESCC). However, the prognostic value of histologically-defined surgical margin status is limited by its suboptimal accuracy in indicating patients’ outcomes. Here, we explored the potential of margin-molecular residual disease (MRD) based on next-generation sequencing (NGS) as a feasible and more reliable biomarker for identifying patients with a high risk of recurrence.

NGS data from 22 early stage ESCC patients with matched tumor and histologically negative resection margin, as well as normal epithelial tissue samples, were retrospectively reviewed. Comparisons of the respective mutational landscapes, as extracted by profiling using a 425-cancer-gene panel (GeneseeqPrime®), were performed. Associations of disease-free survival (DFS) with clinical features and margin-MRD were analyzed.

A total of the 11 (50%) patients with histologically negative margin had detectable somatic mutations as assessed by NGS. TP53 alterations were highly enriched in the tumor (ptumor-normal = 0.001) and the margin (pmargin-normal = 0.015) samples compared with the normal tissues, whereas NOTCH1 alterations were much more common in the normal samples (ptumor-normal = 0.001, pmargin-normal = 0.001). Tumor-specific mutations were detected in six (6/11, 55%) of the NGS-positive margins. Survival analysis showed that those having MRD-positive margins had an unfavorable DFS compared with those having MRD-negative margins (p = 0.08, HR (95%CI): 3.28 (0.81–13.4)).

In this study, the presence of mutations in a considerable proportion of histologically negative resection margins and a tendency for worse prognosis in patients carrying MRD-positive margins was demonstrated. Our findings suggest that margin-MRD may serve as a more accurate prognostic predictor for disease recurrence, and highlight the clinical relevance of using NGS to detect MRD for proper prognostic stratifications and precise treatment guidance.

430. MICRONUTRIENT INSUFFICIENCY AFTER SURGERY FOR OESOPHAGOGASTRIC NEOPLASMS: A PROSPECTIVE INTERVENTION STUDY NAMED THE VITAMIN STUDY

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Oesophageal and gastric cancer are among the top ten cancers worldwide. Both diseases have major impact on the nutritional status and quality of life (QoL). Preoperative malnutrition is reported in 42–80%. However, studies investigating postoperative nutritional status are scarce and postoperative identification and treatment of micronutritional deficiencies are currently lacking in (inter-)national guidelines. The aim of this study is to identify and target micronutrient deficiencies after surgery for oesophageal or gastric neoplasms.

This is a single centre prospective intervention trial with inclusion of 248 patients who underwent oesophagectomy (n = 124) or subtotal gastrectomy (n = 124). Patients will receive a tailormade multivitamin supplement which differs per group and additionally a calcium supplement. Baseline measurements consist of blood withdrawal, faecal elastase-1 analysis, QoL and dietary behaviour. After 6, 12 and 24 months from baseline, measurements are repeated, and a supplement questionnaire is added. The primary objective is micronutrient deficiency (yes/no). Secondary objectives include occurrence and symptoms of pancreas insufficiency (n, %), time between surgery and start of supplementation (mean in months) and QoL at all time points. Inclusion started in December 2021 and is still recruiting. Currently, preliminary results of 40 included patients are available, whereby 24 patients underwent oesophagectomy and 16 patients underwent gastrectomy (table 1). In this population, 87.5% developed at least one micronutrient deficiency, equally seen per subgroup. The most profound deficiencies found are vitamin D (55.0%), ferritin (40.0%), Iron (32.5%), zinc (22.5%). Other deficiencies found are folic acid (12.5%), calcium (7.5%), vitamin B6 (5.0%) and vitamin B12 (2.5%). Decreased faecal elastase-1 (< 200 ng/kg) was found in 15% of the total population.

Literature regarding the incidence of micronutritional deficiencies and supplementation after oesophageal and gastric surgery is scarce. If micronutrient deficiencies are significantly present in this population and daily supplementation can prevent and resolve these deficiencies, routine monitoring and supplementation of micronutrient deficiencies can be implemented in the standard postoperative care of oesophageal and gastric surgery.

431. THORACOSCOPIC ESOPHAGEAL CANCER SURGERY IN THE LEFT LATERAL POSITION WITH EMPHASIS ON SAFETY AND RADICAL CURE

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Compared with thoracoscopic esophagectomy in the prone position (PP), the conventional thoracoscopic esophagectomy in the left lateral position (LL) with artificial pneumothorax is slightly more difficult for dissection of the middle and lower mediastinum, but is superior to PP because the operation can be performed with good visual field in the upper mediastinum. The