esophagectomy from Jan. 2010 to Dec. 2016. Patients were divided into two groups according to the postoperative pathological outcomes: patients with only lymph node metastasis were pointed into group A, patients with only lymphovascular invasion were distributed to group B. Clinical outcomes and survival data were compared using TNM stages of AJCC 8th edition.

After 68.1 months of median follow-up time, 1596 patients who received esophagectomy were included. The median overall survival (OS) was 45.9 months (95% CI 38.5–53.2). Only lymph node metastasis group achieved median OS of 34.9 months (95% CI 30.7–39.1), however, only lymphovascular invasion group did not reach the median OS time. The OS at 1, 3, and 5 years were 91%, 70%, and 64% in the only lymphovascular invasion group, respectively. In the only lymph node metastasis group, the OS rates at 1, 3, and 5 years were 82%, 49%, and 37%, respectively (HR 0.438, 95% CI 0.3074–0.624, P = 0.0012).

Esophageal cancer patients with only lymph node metastasis had significantly worse OS than the patients with only lymphovascular invasion. It reveals that we should pay more attention to these risk factors, and further studies need to be done to stratify the accurate subgroups.

366. SURGERY VERSUS NON-SURGICAL TREATMENT FOR THORACIC ESOPHAGEAL CANCER IN PATIENTS OLDER THAN 70 YEARS: A RETROSPECTIVE ANALYSIS OF 749 CASES

Wheatley, David Chan Ariyarathenam, Richard Berrisford, Lee Humphreys, Grant Sanders, Tim Wheatley, David Chan

The highest incidence of esophageal cancer is in East Asia, but as for advanced age people, there are also many non-tumor factors affecting overall survival (OS), such as cardiovascular and cerebrovascular diseases. Our purpose is to determine whether the older patients after esophagectomy had better OS than those treated with non-surgical treatment.

Data were obtained from the Sichuan Cancer Hospital & Institute Esophageal Cancer Case Management Database (SCH-ECCM Database) and Department of Radiation Oncology Database. We retrospective analyzed esophageal cancer patients older than 70 years who underwent esophagectomy or radiotherapy/chemotherapy from Jan. 2009 to Dec. 2017. The patients were divided into two groups: surgery group (S group) and non-surgery group (NS group). Outcome measures depend on OS.

After 60.6 months of median follow-up time, 749 patients were included. 532 of 749 patients (71.0%) underwent surgery, 217 of 749 patients (30.0%) underwent non-surgical treatment including radiotherapy/chemotherapy. In the S group, the median OS of was 39.7 months (95% CI 33.7–45.7), while the NS group was only 24.0 months (95% CI 19.6–28.4). The OS at 1, 3, and 5 years were 84%, 52%, and 39% in the S group, respectively. In the NS group, the OS rates at 1, 3, and 5 years were 72%, 32%, and 29%, respectively (HR 0.69, 95% CI 0.561–0.846, P = 0.0001).

Esophageal cancer patients older than 70 years who underwent esophagectomy had significantly better OS than those who underwent non-surgical treatment based on radiotherapy and/or chemotherapy.

367. RANDOMISED CONTROLLED TRIAL (FEASIBILITY STUDY) OF PROPHYLACTIC PYLORIC BALLOON DILATATION DURING IVOR LEWIS ESOPHAGECTOMY TO PREVENT DELAYED GASTRIC EMPTYING

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Early delayed gastric emptying (DGE) occurs in up to 37% of patients following esophagectomy. This can contribute to increased anastomotic leak and respiratory infection rates. Although the treatment of DGE in the form of pyloric balloon dilatation (PBD) post-operatively is well established, there is no consensus on the optimal approach in the prevention of DGE.

The aim is to carry out a randomised control trial to determine the efficacy of prophylactic PBD in the prevention of DGE following esophagectomy. This presentation details the protocol, recruitment strategy and potential timeline for a feasibility study addressing this. We detail the rationale, objectives, design, and methods of this study. Patients will be recruited over a three to six-month period (starting in January 2022) and randomised to either a control group (no intervention) or a treatment group (prophylactic PBD).

The Chief Investigator has obtained approval from the UK Health Research Authority (HRA) and Research Ethics Committee (REC) on 01/12/21 (IRAS project ID: 287659).

As a feasibility study, the objectives will be to ascertain the following: Number of patients approached; Number of patients who agreed to be randomised; Number of patients successfully randomised; Number of patients who dropped out; Successful measurement of outcome measures (delayed gastric emptying, pneumonia, anastomotic leak).

Propylatic pyloric balloon dilatation is potentially a safe and effective procedure which can significantly improve outcomes in patients after esophagectomy. This protocol describes details for the feasibility study to be carried out which will allow important learning points for the main randomised controlled trial.

368. EARLY DELAYED GASTRIC EMPTYING AFTER ESOPHAGECTOMY: VALIDATION OF THE INTERNATIONAL EXPERT CONSENSUS DEFINITION (MIE GROUP)

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Early delayed gastric emptying (DGE) affects up to 37% of patients after esophagectomy. An international expert consensus (IEC) agreed on a diagnostic criteria in 2020. The degree of adoption of this definition worldwide is unknown and how it compares to well established definitions locally with subtle yet significant differences. The aim of this study was to compare the IEC definition of early DGE to the definition at the University.

All patients who underwent esophagectomy for cancer at UHP between April 2019–August 2020 were analysed. The IEC definition was applied retrospectively and the rates of DGE were compared between the two criteria.

One hundred consecutive patients (74 Male (74%), median age (range) 68 (45– 83 years)) were analysed. The rates of early DGE according to the IEC and UHP definitions were 20% and 28% respectively (p = 0.246). Eight patients had anastomotic leak, 6 of whom had DGE. Pneumonia was diagnosed in 28 patients (8 and 6 in the IEC and UHP groups respectively). Twenty-nine patients (29%) had pyloric balloon dilatation (PBD). Seventeen patients in the index admission and twelve at later date. Of the 17 patients 9 were in the IEC group and 11 in the UHP group.
The UHP definition does seem to match the MIE consensus definition and is not inferior. The dynamic process of DGE does support the policy our unit has to continue monitoring patients with chest radiographs. This not only identifies DGE early and modify management but also allows assessment of conduit after the patient starts eating.

Definition of Early Delayed Gastric Emptying post Esophagectomy.pdf (could not be inserted).

369. GENOMIC ALTERATIONS AND SURVIVAL AFTER TREATMENT OF EAC BY SURGERY WITHOUT CHEMO- OR RADIOTHERAPY
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Prognostic biomarkers for esophageal adenocarcinoma (EAC) remain elusive but may be helpful in treatment planning, as TNM staging often fails to accurately predict survival. Advanced stage patients are treated by peri-operative chemoradiotherapy; biomarkers associated with survival are thus likely to represent both true prognostic markers as well as markers of response to chemo/radiotherapy. Here we present first-pass genomic findings for a cohort of optimally staged EAC patients treated by surgery alone.

DNA was extracted from fresh frozen EAC and matching normal squamous esophageal tissues obtained at esophagectomy from 65 consenting patients who did not receive any neo- or adjuvant chemo- or radiotherapy due to institutional preference at the time of tissue collection. Library preparation and sequencing for a targeted 600 cancer-associated gene panel designed using the Roche/NimbleGen EZ Choice Library NimbleDesign platform were conducted on Illumina-based platforms followed by analysis with an accredited bioinformatics pipeline. The panel design incorporated the entire coding region plus 10 bp of flanking intron of each gene.

Mean age 70 yrs; 88% male. All patients underwent an en bloc esophagectomy (mean 35 lymph nodes). TNM (7th ed.) stages were 61% Stage 3, 18% stage 2, 14% stage 1, 6% stage 4. At median 9.5 years follow-up, 20 (31%) patients remained alive. Copy number changes were common, reflecting chromosomal instability. Less than 8% of patients had high tumour mutational burden (>10mut/MB), associated with mutations in DNA repair genes. Commonest somatic mutations included TP53 (HR: 0.43) and LRPIB (HR: 1.7). Pathways implicated included RTK signalling (PIK3CA, EGFR, KRAS), DNA damage (BRCAP1, PALB2, MGMT) and histone remodelling (ARID1A, ARID2, KMT2D).

Peri-operative treatment means linking genomic changes independent of stage to clinical outcomes is difficult. Neoadjuvant and/or adjuvant treatment is now standard for T2-4 or node positive EAC. This cohort of 65 patients, most of whom had stage 3 disease and all of whom underwent optimal staging with en bloc esophagectomy, represents a unique opportunity to analyze characteristics of EAC without confounding by peri-operative treatment. An EAC-specific DNA sequencing panel approach offers potential for personalized therapy.

370. EXTERNAL VALIDATION OF A NOMOGRAM PREDICTING CONDITIONAL SURVIVAL AFTER CURATIVE TREATMENT OF ESOPHAGEAL CANCER
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To predict 5-year overall survival for esophageal cancer patients after neoadjuvant treatment followed by esophagectomy, recently a conditional survival nomogram was developed. This nomogram includes cN-stage, ypT-stage, ypN-stage, cardiac comorbidity, chyle leakage and pulmonary complications as independent predictors of survival. The aim of this study was to externally validate the conditional survival nomogram in a cohort of patients from another European high volume esophageal cancer center.

We included consecutive patients with a resectable (ct1-4a, N0-3, M0) adenoc- or squamous cell esophageal carcinoma between January 2004 and January 2016 who received neoadjuvant treatment followed by an esophagectomy in a tertiary referral center for esophageal cancer. Standard prognostic factors and nomogram specific data were collected. The discriminative ability of the nomogram for the prediction of 5-year overall survival was quantified by Harrell’s C-statistics, directly after surgery and given survival for 1, 2, 3 and 4 years already survived. Calibration of the conditional survival nomogram was visualized by plotting actual 5 years survival against predicted probabilities.

296 patients were included. The median overall survival was 48.1 months (95%CI:37.5–58.7). The probability to achieve 5-year overall survival directly after surgery was 45% and increased to 57%, 68%, 78% and 89% for each additional year survived. Prediction of 5-year overall survival differed from the observed survival with a calibration slope of 0.54, 0.55, 0.59, 0.73 and 1.09, directly after surgery and given survival 1, 2, 3, and 4 years already survived, respectively. The discriminative ability of the nomogram for 5-year survival was moderate with a C-statistics of 0.65, compared to a value of 0.70 in the original study.

This study externally validated a model for conditional survival after neoadjuvant chemoradiotherapy and surgery for esophageal cancer. The proposed