Sq cancer is of uncertain significance and warrants further research into new potential applications for HER2 targeting.

Disclosure of Interest None Declared

PTU-158 DNA PLOIDY ABNORMALITIES CORRELATE WITH INCREASING DEGREE OF DYSPLASIA IN CASES REFERRED TO A SPECIALIST CLINICAL IMAGE CYTOMETRY SERVICE FOR THE MANAGEMENT OF BARRETT'S OESOPHAGUS

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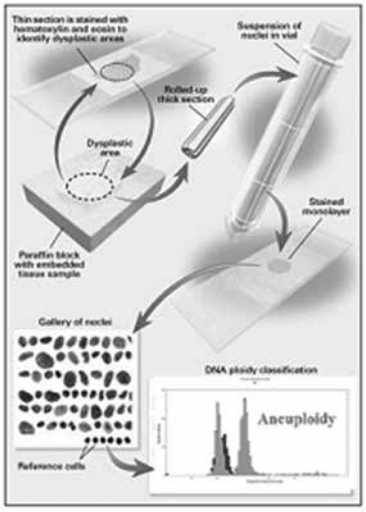
Introduction In Barrett's oesophagus (BE), Barrett's dysplasia and esophageal carcinoma (EC) there can be genomic instability. This instability leads to DNA abnormalities, typically aneuploidy, where cells accumulate abnormal amounts of DNA. Tetraploidy is a specific term given to cells with twice the normal (diploid) content of DNA. In our specialist referral centre for BE, ploidy assessment is requested for cases with persistent or recurrent low-grade/indefinite for dysplasia (LGD/IFD), clinical suspicion of progression due for example to a strong family history of EC in long segment BE, or cases suspected to relapse after prior treatment for high-grade dysplasia/intramucosal cancer (HGD/IMC). This study aimed to assess correlation between dysplasia and DNA ploidy abnormalities (DNA-PA) in clinical cases with BE referred for ploidy assessment to the UCLH specialist image cytometry (IC) service.

Methods All clinical referrals for IC were retrospectively identified (n = 189) and reports from analysed blocks captured (n = 682). All samples were processed by a specialist IC technician to produce ploidy results with an automated image cytometric analyser. Ploidy histograms were then reviewed to confirm the automated IC result as diploid, aneuploid, tetraploid or equivocal. Histology was then reported or reviewed by an expert GI pathologist and scored as 1 (BE), 2 (IFD), 3 (LGD) or 4 (HGD).

Results Case referrals were received from 4 institutions, mean age was 58yo (24–85yo, SD 13) and the majority were men (79.9%). Corresponding histology was available in 69.7% (n = 475) of samples processed. DNA-PA positivity rates (Aneuploidy/Tetraploidy) in the sub-group with histology were 4% in BE (n = 376), 6.9% in IFD (n = 29), 29% in LGD (n = 31) and 51.3% in HGD (n = 39). Pearson product-moment correlation coefficient showed significant correlation between increasing degree of dysplasia and DNA-PA (Pearson r = 0.96, p = 0.039).



Abstract PTU-158 Figure

Conclusion This study has demonstrated that in our large case series DNA-PA's correlate with increasing degree of dysplasia. DNA-PA is a validated biomarker for cancer progression and has been used in our cohort to guide frequency of surveillance and in some LGD cases minimally invasive endoscopic therapy, where they otherwise would not have received it. Further longitudinal studies on the progression to cancer in our case series will provide further insight into this important biomarker.

Disclosure of Interest None Declared

PTU-159 CHARACTERISATION OF OESOPHAGEAL MUC1 EXPRESSION IN THE PROGRESSION TO OESOPHAGEAL ADENOCARCINOMA

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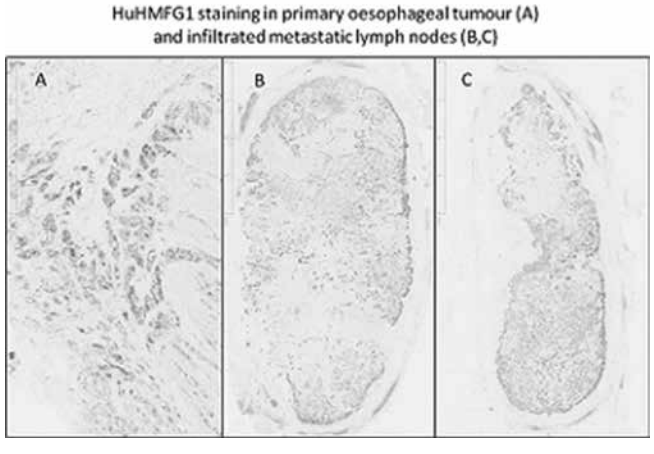
Introduction Studies on oesophageal MUC1 expression have shown conflicting results. One found MUC1 in 100% of 52 oesophageal adenocarcinoma (OA) patient's using an anti-MUC1 antibody(1), whilst another found no expression in 23 OA cases at the RNA level(2). It is probable that detection of MUC1 repeat domains varies in the progression to cancer due to changes in glycosylation. This study aims to characterise oesophageal MUC1 expression using antibodies binding extracellular peptide repeats and an intracellular epitope unaffected by surface glycosylation.

Methods 138 paraffin embedded specimens were selected from 106 patients containing normal squamous (Sq; n = 34), normal gastric (G; n = 15), non-dysplastic Barrett's (NDBE; n = 27), low grade dysplasia (LGD; n = 22), carcinoma in-situ (HGD/IMC; n = 35) and invasive OA (IOA; n = 21). 11 IOA cases had matched specimens containing infiltrated lymph nodes (LN). Immunohistochemistry was performed using the antibodies CT2 (binding the MUC1 cytoplasmic tail)(3), NCL-MUC-1(binding the epitope PDTRPAP of the extracellular peptide) and HuHMFG1 (binding PDTR of the extracellular peptide). Intensity (0 to 3+) and extent (0; < 1% = 1; 1–10% = 2; 10–33% = 3; 33–66% = 4; > 66% = 5) of tissue staining was scored. Positive cases were defined as those staining 2+/3+ in > 10% of the pathology examined.



Abstract PTU-159 Figure

Results MUC1 was shown to be significantly expressed using our antibody panel (HuHMFG1; CT2; NCL-MUC-1) in Sq (61%; 38%; 40%), G (100%; 100%; 86%), NDBE (96%; 100%; 6%), LGD (91%; 86%; 12%), HGD/IMC (91%; 97%; 19%) and IOA (95%; 91%; 82%). 100% of the metastatic OA group with infiltrated LNs stained