Overall, seven of these specimens contained both mutated and wild type dysplastic glands, with a further one specimen containing three distinct p16*INK4A*mutation. However, the related cancers from these specimens were monoclonal for a mutated genotype found in the dysplasia. These data show that Barrett's dysplasia is polyclonal but Barrett's adenocarcinoma is monoclonal, suggesting that a cellular competition may be involved in the evolution of Barrett's adenocarcinoma from its surrounding dysplasia.

Conclusion

1. Barrett's dysplasia exhibits a mosaic pattern of clones, indicating genetic diversity in Barrett's dysplasia.
2. Oesophageal adenocarcinomas were monoclonal outgrowths from polyclonal Barrett's dysplasia.

Competing interests None declared.

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OC-085 CIRCULATING TUMOUR MARKERS CAN DISCRIMINATE BETWEEN PATIENTS WITH AND WITHOUT OESOPHAGEAL NEOPLASIA

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Introduction Oesophageal cancer is the fastest rising cause of gastrointestinal cancer in the UK, and associated with a poor prognosis. Early diagnosis represents the best opportunity for cure, but early disease is often asymptomatic. Current surveillance programs improve outcome, but rely on two yearly endoscopic screening of previously identified Barrett's oesophagus patients. This has limited sensitivity and acceptability to patients. New endoscopic treatments for oesophageal dysplasia can avoid major surgery, but discriminating between patients with and without invasive disease can be challenging. A discriminating diagnostic blood test may offer improved patient outcome.

Methods In this study, we optimised a series of promising diagnostic markers utilising circulating free DNA (cfDNA), with a preparation method allowing small DNA fragments to be purified. cfDNA was isolated from 115 patients including a "normal" population of 44 patients (Barrett's oesophagus or normal endoscopic findings). Twenty-five patients had high grade dysplasia (HGD) or intramucosal cancer (IMC), and 46 patients had invasive cancer. In each case real time quantitative polymerase chain reaction (RT-PCR) was performed for Line 1 79 bp (quantitative total DNA marker), Line 1 300 bp, Alu 115 bp, Alu 247 bp and mitochondrial primers. Each marker was analysed for differences between normal, HGD and IMC, and invasive cancer populations using Mann–Whitney U tests and ROC curves. The best performing were analysed in combination by logistic regression. A Bonferroni correction was applied.

Results The average age of the normal population group was 56.1 years, the HGD and IMC population group 70.0 years, and the cancer population group 68.9 years. The mean total DNA (ng/ml) was 10.8, 14.1, and 19.2 respectively. Mean DNA marker levels ng/ml. Analysing total DNA, mitochondrial DNA and Line 1 300bp fragment DNA levels, there were highly significant differences between the normal group vs all dysplastic and cancerous patients ($p \leq 0.003$).

Conclusion The combination DNA marker was able to discriminate the normal population from all dysplasia and cancer patients with a ROC curve of 0.778. This may offer the prospect of a simple blood test to stratify patients and improve surveillance for dysplasia and early cancer. The same model was able to discriminate the normal population from invasive cancer patients with a ROC curve of 0.847. This may help in the rapid identification of patients who require surgery.

Abstract OC-085 Table 1

Mean DNA	Total	Mito	115	300	247	79/300	115/247
"Normal"	10.8	1.1	35.6	1.8	3.1	6.3	11.0
HGD + IMC	14.1	4.2	42.6	3.2	4.6	6.1	10.3
Inv. cancer	19.2	6.2	76.9	5.3	4.9	8.8	16.3

Competing interests None declared.

OC-086 SURGERY ALONE VS CHEMORADIOTHERAPY FOLLOWED BY SURGERY FOR STAGE I AND II OESOPHAGEAL CANCER: FINAL ANALYSIS OF A RANDOMISED CONTROLLED PHASE III TRIAL—FFCD 9901

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Introduction Resection remains the best treatment for local control of oesophageal carcinoma (OC), but local recurrence, distant metastasis and poor survival remain an issue after surgery. Often investigated in locally advanced OC, the impact of neoadjuvant chemoradiotherapy (NCRT) is unknown in patients with stage I or II OC. The aim of this multicentre randomised controlled phase III trial was to assess whether NCRT improves outcomes for patients with stage I or II OC.

Methods 195 patients were randomly assigned to surgery alone (S group, n=98) or to NCRT group (NCRT group, n=97; 45Gy given in 25 fractions over 5 weeks with two courses of concomitant chemotherapy by 5-Fluorouracil 800 mg/m^2 on days 1–4 and cisplatin 75 mg/m^2 on day 1 or 2). The primary endpoint was overall survival. Secondary endpoints were progression free survival, postoperative morbidity and 30-day mortality, R0 resection rate and prognostic factor identification. Analysis was done by intention to treat.

Results Patient and tumour characteristics were well-balanced between the two groups. Patients were preoperatively staged I in 18%, IIA in 49.7%, IIB in 31.8%, unknown in 0.5%. Postoperative morbidity and 30-day mortality rates were 49.5% vs 43.9% (p=0.17) and 1.1% vs 7.3% (p=0.054) in the S group and NCRT group, respectively. After a median follow-up of 5.7 years, 106 deaths were observed. Median survivals were 43.8 vs 31.8 months, respectively (HR 0.92, 95% CI 0.63 to 1.34, p=0.66). The trial was stopped due to futility.