Results 506 cases were discussed via email (n=257) or via phone calls (n=249), and this only included logged phone calls (mean 1.9 referrals per working day). This is an underestimation of the number of calls received because phone calls documented on the electronic patient record were not accessible and therefore not included. The number of cases discussed via email is not a reflection of the number of emails, as each case may have involved several emails. Table 1 shows the reasons for referral. The outcome of the referrals included advice (33.6%,n=170), advice and pleural clinic follow up (23.7%, n=120), advice and scheduling for a pleural procedure (42.7%,n=216). Of the 216 scheduled for procedures, 49.1% (n=106) were scheduled for a procedure by the pleural team (n=29 pleural one-stop-shop appointments for procedure and review), 49.1% (n=106) were scheduled for a procedure by the radiology team, 1.4% (n=3) were scheduled for an initial procedure by the radiology team (pleural fluid aspiration) then a further procedure by the pleural team (indwelling pleural catheter insertion(n=2), medical thoracoscopy(n=1)), 0.5% (n=1) were scheduled for bronchoscopy. An analysis of the referrals revealed that 22 unnecessary procedures and clinic appointments were avoided after discussion with the pleural team including new pleural outpatient referrals (n=4), follow up pleural outpatient appointment(n=10), pleural procedure appointment (n=5), referral to another clinic(n=2), CT scan (n=1). Advice given on the most appropriate investigation, such as advising large volume aspiration rather than chest drain insertion and hospital admission for a new undiagnosed pleural effusion, was not quantifiable in this retrospective study.

Discussion Pleural on-call service is beneficial and can help avoid unnecessary clinic and procedure list appointments.

Abstract P239 Table 1 Shows the reasons for referral to the pleural phone and email service

Reason for referral	Percentage of total referrals (number)
Pleural effusion (new, previously known, hydropneumothorax)	66.8% (n=338)
Empyema (diagnosed or clinically/radiologically suspected)	8.3% (n=42)
Pneumothorax	6.5% (n=33)
Indwelling pleural catheter-related queries	5.1% (n=26)
Other (eg pleurodesis-related, pleural thickening)	13.2% (n=67)

P240 OUTCOMES OF THOSE DIAGNOSED WITH CHRONIC FIBRINOUS PLEURITIS AFTER MEDICAL THORACOSCOPY: A LOCAL REVIEW

B Teng, D Cooper, A Aujayeb. *North Tyneside General Hospital, North Shields, UK*

10.1136/thoraxjnl-2017-210983.382

Introduction Chronic Fibrinous Pleuritis (CFP) is a common histological diagnosis encountered after medical thoracoscopy (MT), particularly in areas with high incidences of mesothelioma. This poses a challenge for clinicians as a proportion of patients are subsequently proven to have an alternative diagnosis. A local review was undertaken to discern the clinical outcome for those diagnosed with having CFP.

Methods A retrospective review of 202 MT performed at a regional pleural unit over a 6 year period was conducted. For those initially diagnosed with CFP, details including further biopsies, length of follow up, final diagnoses and survival times were recorded.

Results Mesothelioma (77), breast (13) and lung (12) were the commonest malignancies encountered. Eighty-four biopsies were consistent with CFP; all were followed up with either CXR, CT (a mean interval of 4.5 months) or both. A further 31 had the diagnosis refined: 19 were subsequently diagnosed with malignancy by alternative methods (4 VATS, 3 Ct guided , 1 axillary lymph node biopsy, 11 progressive radiology). Mean time to repeat biopsy was 6.82 months (95% CI 3.14 to 10.87) and mean follow up was 16.7 months (95% CI 14.06 to 19.46). The remaining 53 patients were alive or passed away due to unrelated causes at time of writing (range of 3 to 86 months).

Conclusion An initial finding of CFP should be investigated further in the right clinical context, particularly where there is still a high suspicion of cancer. Patients must be made aware of this possibility. This study has shown a conclusive diagnosis can be made in a further 15% of patients, in keeping with other studies. Clinicians can be reassured in those with stable symptomology and radiology after a period of observation, though this timeline remains undefined.

P241 DIAGNOSTIC TIMELINE OF PATIENTS WITH SUSPECTED MALIGNANT (UNILATERAL) EFFUSION IN A LARGE TERTIARY CENTRE

L Crowley, A Rajgor, AKA Abi Musa Asa'ari, N Yoganayagam, T Palit, A Ali, N Rowe, S Bikmalla, M Iqbal, B Ganaie, M Haris, T Cusay, S Khan, N Maddekar. *Royal Stoke University Hospital, University Hospitals of North Midlands NHS Trust, Stoke-on-Trent, UK*

10.1136/thoraxjnl-2017-210983.383

Introduction Malignant pleural effusions (MPE) remain a significant problem with approximately 50% of all cancer patients developing a MPE during their disease process. Our pleural service is one of the largest in the country. This day case service has the potential to accelerate MPE diagnosis, management and thus enhance patient experience.

Objectives The aim was to assess the timeline of patients referred to pleural clinic with suspected malignant (unilateral) effusion.

Method Retrospective analysis of 178 consecutive patients referred to pleural clinic with suspected MPE from March 2015 to November 2016. Data was collated from electronic patient records, including route of referral, diagnosis methodology, speed of diagnosis (MDT) and procedures performed.

Results 126 (70.8%) of the 178 patients had pleural effusion and underwent pleural aspiration. 61 patients (48.4%) had positive malignant fluid cytology. 26 (43%) and 35 (57%) were thoracic and extra thoracic malignancies respectively. Out of the 61 patients, 26 (43%) had systemic treatment and 35 (57%) had palliative management. These patients were diagnosed on average within 17 days from referral to clinic (SD 17.3). Mean time taken from referral to pleural clinic review was 5 days (SD 6.6) and 12.3 days (SD 16.6) elapsed from pleural clinic review to diagnosis. Average time from cytology diagnoses to treatment was 26 days. 20 (16%) patients were referred for VATS (Video Assisted Thoracoscopic Surgery). The average time from VATS diagnosis to treatment was 37

days (for further breakdown see Table1). The remaining (64%) were benign till to date.

Conclusion The data demonstrates that a dedicated pleural service has the ability to rapidly review and diagnose patients with suspected MPE (especially the cytology positive). There is a need for improvement in patient's timeline for those referred for VATS. Perhaps a dedicated pleural multidisciplinary meeting may help to reduce the delay and improve patient care.

Abstract P241 Table 1

Mean time from referral to Pleural clinic	5 days
Mean time from referral to pleural clinic to diagnosis (pleural fluid cytology positive)	17 days
Mean time from diagnosis (pleural fluid cytology positive) to treatment	26 days
Mean time from pleural clinic to VATS referral	10.2 days
Mean time from VATS referral to VATS procedure	22.6 days
Mean time from VATS to diagnosis	11.6 days

P242 THE PROGNOSIS OF PATIENTS DIAGNOSED WITH PULMONARY ADENOCARCINOMA AT LOCAL ANAESTHETIC THORACOSCOPY (LAT): THE ROLE OF PRIMARY T STAGE

F Khan, RK Panchal, C Richards, S Ahmed, J Bennett, M Tufail. *Glenfield Hospital, University Hospitals of Leicester, Leicester, UK*

10.1136/thoraxjnl-2017-210983.384

Background Adenocarcinoma is the commonest type of lung cancer and may present with metastatic malignant pleural effusion (MPE)[1] We observed that some patients with pulmonary adenocarcinoma diagnosed at LAT did not have radiological evidence of primary lung parenchymal lesion. We hypothesised that these patients may have a better prognosis than those with lung nodules or masses due to reduced tumour burden.

Methods We retrospectively reviewed all patients who underwent LAT from 2006–2016 and screened those diagnosed with pulmonary adenocarcinoma. We reviewed these patients' radiology, age, gender, TNM staging and prognosis.

Results 491 patients underwent LAT from 2006–2016. 69/491 (14.05%) were diagnosed with pulmonary adenocarcinoma on histology of parietal pleura. 8 patients out of 69 (3 females, 5 males; mean age 68.25 years) did not have any radiologically detectable lung parenchymal lesion. The TNM staging (7th edition) of these eight patients without lung parenchymal lesion was T0N0M1a, T0N2M1a, T0N2M1a, T0N3M1a, T0N3M1a, T0N0M1b, T0N1M1b, T0N2M1b. Overall prognosis of MPE with lung parenchymal lesion was 331.7+/-63.14 days and without lung parenchymal lesion was 143.5 +/– 32.8 days, p=0.31 (figure 1)

Conclusion We have demonstrated no significant difference in the prognosis of patients with MPE secondary to pulmonary adenocarcinoma in the absence or presence of a radiologically determined primary lung parenchymal lesion. Although not statistically different (p=0.31) those patients without a primary lung parenchymal lesion may have a worse prognosis and this requires further investigation in larger cohorts as this may prove to be an important prognostic factor for MPE.

REFERENCE

1. Kasapoglu US, Arinç S, Gungor S, Irmak I, Guney P, Aksoy F, Bandak D, Hazar A. Prognostic factors affecting survival in non-small cell lung carcinoma patients with malignant pleural effusions. *The Clinical Respiratory Journal* 2016;10:791–799.

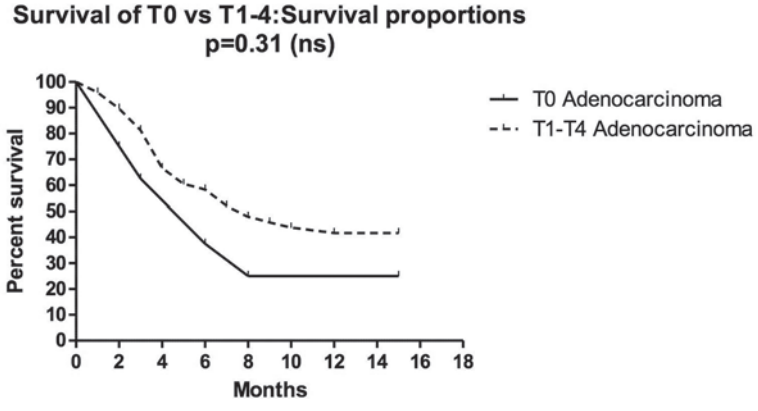
P243 SURVIVAL PREDICTION IN MALIGNANT PLEURAL MESOTHELIOMA: FUNDAMENTAL LIMITATIONS OF ROUTINELY AVAILABLE CLINIC PREDICTORS

[1]AC Kidd, [1]M McGettrick, [1]S Tsim, [2]DL Halligan, [2]M Bylesjo, [3]KG Blyth. *[1]Queen Elizabeth University Hospital, Glasgow, UK; [2]Fios Genomics, Edinburgh, UK; [3]Institute of Infection, Immunity and Inflammation, University of Glasgow, Glasgow, UK*

10.1136/thoraxjnl-2017-210983.385

Introduction Accurate prognostication is difficult in Malignant Pleural Mesothelioma (MPM). Published prognostic models antedate optimal staging, a range of emerging predictors and use methods that cannot be up-scaled to incorporate these. Most existing models allocate patients to risk groups rather than precisely predicting survival. We developed robust computational models that can be up-scaled and provide quantitative statistics regarding the predictions offered. Here we report their performance using routinely available clinical data, on which previous models are based.

Materials and Methods Baseline information regarding 20 candidate predictors was collected for 269 MPM patients diagnosed in the West of Scotland (January 2008 – April 2014). Patients were allocated to balanced training (n=169) and validation sets (n=100). Prognostic signatures (minimal length best-performing multivariate trained models) were generated

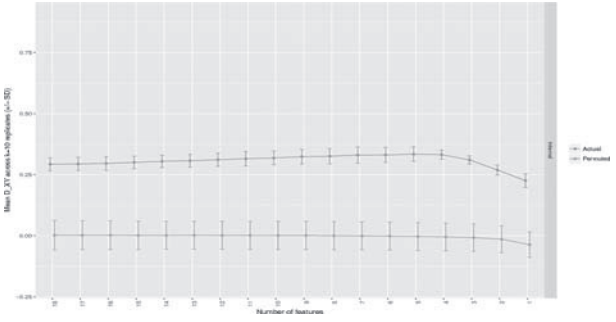


Abstract P242 Figure 1

by Least Absolute Shrinkage and Selection Operator (Lasso) regression for Overall Survival (OS), OS<6 months and OS<12 months. OS prediction was quantified using Somers D_{XY} statistic, which varies from 0 to 1, with increasing concordance between observed and predicted outcomes. 6- and 12 month survival were described by area under the curve (AUC) scores.

Results Median OS was 270 (IQR 140–450) days. The primary OS model assigned high weights to 4 predictors: age, performance status, white cell count and serum albumin, and after cross-validation performed significantly better than would be expected by chance (mean D_{XY} 0.332 (+/-0.019) figure 1). However, validation set D_{XY} was only 0.221 (0.0935–0.346), equating to a 22% improvement in survival prediction than would be expected by chance. 6- and 12 month OS signatures included the same 4 predictors, in addition to epithelioid histology plus platelets and epithelioid histology plus C-reactive protein (mean AUC 0.758 (+/-0.022) and 0.737 (+/-0.012), respectively). The <6 month OS model demonstrated 74% sensitivity and 68% specificity. The <12 month OS model demonstrated 63% sensitivity and 79% specificity. Model content and performance were generally comparable with previous studies.

Discussion The prognostic value of the basic clinical information contained in these, and previously published models, is fundamentally of limited value in accurately predicting MPM prognosis. The methods described are suitable for expansion using emerging predictors, including tumour genomics and volumetric staging.



Abstract P243 Figure 1 Model performance as a function of the number of features for actual (red line) and permuted (blue line) data. Performance for Overall Survival (OS) is measured by D_{XY} for OS. Standard deviations from replicates of cross-validation are shown for each point as bars.

Clinical implications of cystic fibrosis

P244 EXTENDED CFTR SCREENING FOR PATIENTS WITH A CLINICAL DIAGNOSIS OF CF BUT ONLY ONE GENE ON INITIAL SCREENING

F Frost, P Griffiths, MJ Ledson, MJ Walshaw, D Nazareth. *Liverpool Heart and Chest Hospital, Liverpool, UK*

10.1136/thoraxjnl-2017-210983.386

Introduction Standard CF genotyping only identifies 94% of CF genes, resulting in the emergence of a "cystic fibrosis screen positive, inconclusive diagnosis" (CFSPID) designation. This, and the advent of genotype-specific CFTR directed therapies has highlighted the need for more comprehensive genotyping, particularly to identify rarer genes when only a single gene is found on initial screening. However, extended CFTR screening is an expensive investigation and we wished to assess its use and yield.

Methods Between 2014 and 2016 we identified 40 people with CF attending our large regional adult unit without two known pathogenic CFTR genes and offered them extended CFTR screening. We looked at the yield in terms of additional genes identified and their clinical significance in 37 of these (3 refused/did not attend).

Results A new molecular diagnosis (i.e., two pathogenic genes) was made in 18 (48.5%) people with CF. Genes associated with CFTR related disorders were found in a further 2 (5.5%), genes of uncertain pathogenicity were found in 3 (8.1%), and one or no genes were found in 14 (37.8%). Of the 18 people with CF with additional identified genes, 8 had those associated with responsiveness to the CFTR potentiator ivacaftor (4 × 3272–26 A≥G, 1 × 711+3 A≥G, 1 × R347H, 1 × 2789+5G≥A, 1 × S945L) and 2 of these (R347H and S945L) have recently been approved for ivacaftor use by the U.S. Food and Drug Administration.

Conclusions In people with a clinical diagnosis of CF but only one pathogenic gene on initial screen, extended CFTR screening identified a second gene in nearly half of cases. Furthermore, a significant proportion of the identified genes have been reported to respond to ivacaftor. It is therefore important that all people with CF without two known mutations undergo extended mutation screening in order to establish who may benefit should the current license for ivacaftor be expanded in the UK.

P245 INFLUENZA B OUTBREAK AT A LARGE ADULT CF CENTRE: CLINICAL CONSEQUENCES AND POTENTIAL CONTRIBUTING FACTORS

[1]JB Dennis, [2]W Welfare, [2]A Turner, [3]PJ Barry, [3]RJ Bright-Thomas. *[1]University of Manchester, Manchester, UK; [2]Central Manchester University Hospitals NHS Foundation Trust, Manchester, UK; [3]Manchester Adult Cystic Fibrosis Centre, Manchester, UK*

10.1136/thoraxjnl-2017-210983.387

Introduction In May 2016 an outbreak of influenza was declared on the adult cystic fibrosis (CF) ward at the Manchester Adult Cystic Fibrosis Centre (MACFC), where all patients are treated in individual rooms and strongly encouraged not to mix. The aim of this study was to investigate the outbreak, its clinical consequences, and potential contributing factors.

Method Notes of all patients admitted to the CF ward in May 2016 were retrospectively reviewed and data recorded included: patient location, respiratory viral PCR results, spirometry data (baseline measurements in the 6 month prior to onset, at onset of influenza, and at 3 months post infection), influenza vaccination status (all staff and patients), and measurements of ventilation in patient rooms.

Results Ten patients tested positive for influenza B; all were shown to have been infected with the same strain of the virus: B/Brisbane/60/2008. An outbreak timeline identified the likely index case (only patient admitted within the incubation period of influenza, first to develop symptoms and test positive for influenza B). Subsequently, 8 patients whose rooms