

P212 CHARACTERISATION OF PATIENTS WITH EXPIRATORY LARGE AIRWAY COLLAPSE

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Background Tracheobronchomalacia (TBM) and excessive dynamic airway collapse (EDAC) are two forms of expiratory large airway collapse which is a potential, often under-diagnosed cause for unexplained cough, breathlessness, inability to expectorate and frequent infections. They can vary in aetiology, morphology, extent and severity. Proper characterisation of patients may help to identify different phenotypes, potentially contributing to more personalised treatment.

Methods We reviewed the database, bronchoscopy reports and video images of n=33 patients (27 female, age 54.5±12.9 years) who had been referred for treatment to a specialist respiratory physiotherapist for the diagnosis of expiratory large airway collapse. Patients were characterised according to the classification proposed by Murgu and Colt (Respirology, 2007). TBM and EDAC were scored in terms of extent (1=mild, <50% collapse, 2=focal, 3=multifocal, 4=diffuse), severity (1= <50% collapse, 2= 50–70% collapse, 3= 70–100%, 4= 100%), morphology (crescent, sabre-sheet, circumferential) and aetiology (idiopathic or secondary to lung disease).

Results Bronchoscopy had been performed in 32 subjects, and video available for review in 26 cases. Of these 26, the extent of collapse was mild in one, focal in nine, multifocal in seven, and diffuse in nine. The severity of collapse was <50% in one, 50–70% in seven, 70–100% in 15, and complete in three. There was a significant relationship between extent and severity ($p=0.01$, $r=0.47$). Two patients had circumferential collapse, the rest were crescent type. Associated diagnoses were: asthma in 23 patients; bronchiectasis in two; Ehlers-Danlos syndrome in one; and none of relevance in the six remaining.

Conclusions Expiratory large airway collapse is a multi-factorial disorder which can manifest in various extent and severity. Further observational studies are warranted to categorise patients and to see if these categories can predict treatment response.

P213 FALLING FLAT: A COMPARISON OF INSPIRATORY FLOW VOLUME LOOPS IN PATIENTS WITH INDUCIBLE LARYNGEAL OBSTRUCTION AND ASTHMA

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Introduction The differential diagnosis of refractory breathlessness can be challenging, involving a systematic assessment of potential causes and aggravating co-morbidities. The index of suspicion for referral for specialist assessment of conditions such as Inducible Laryngeal Obstruction (ILO) may be heightened using available clinical assessment tools, for example, the Inspiratory arm of the flow volume loop (FVL). Sterner (2009) found ILO to be the most common

diagnosis in patients with a consistently abnormal inspiratory loop. Morris & Christopher (2013) found 52% of patients with ILO had flattened inspiratory loop. The current gold standard for objectively assessing for ILO is Laryngoscopy.

Aims and objectives To investigate the presence of an abnormal inspiratory FVL in a sample of patients with symptoms of breathlessness, and to analyse whether this is a predictor of specific causes of breathlessness.

Methods Patient notes and FVL results were reviewed according to characteristic abnormalities of the inspiratory curve (flattened, absent and truncated) for people referred to a tertiary airways service for symptoms of breathlessness over a 22 month period. Assessment information was collated for patients (n=324) diagnosed with asthma, ILO or both. Patient demographics and detailed assessment information were compared across these groups to look for potential patterns and predictors.

Results 59% of patients with ILO (with or without asthma) had an abnormal inspiratory FVL, compared to 42% of patients without ILO. For patients with ILO as their sole diagnosis, 62% had an abnormal FVL. A chi-square analysis showed that an abnormal inspiratory FVL was significantly more common in patients with a diagnosis of ILO ($\chi^2=4.47$; $p\leq 0.05$) compared to patients without.

A binary logistic regression assessed the relationship between an abnormal inspiratory FVL and ILO diagnosis. The model was significant ($\chi^2=5.1$ (1, N=324) $p=0.02$) indicating that FVL was a significant predictor of ILO, and odds ratios suggested that patients with ILO were twice as likely to have an abnormal loop.

Conclusions In patients with breathlessness symptoms that are refractory to optimal medical treatment, observation of the FVL may indicate the potential for further specialist assessment for ILO with provocation videolaryngoscopy.

P214 THE PREVALENCE OF UPPER THORACIC BREATHING PATTERN IN PATIENTS WITH BREATHING PATTERN DISORDER AND INDUCIBLE LARYNGEAL OBSTRUCTION

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Introduction Patients referred to a Tertiary Airways and Severe Asthma Service for refractory breathlessness may be diagnosed with Breathing Pattern Disorder (BPD) or Inducible Laryngeal Obstruction (ILO). Both are known to be comorbidities frequently seen in difficult-to-treat asthma (Tay et al, 2016).

ILO and BPD are frequently seen together in clinical practice, however research has not consistently shown overlap between the two conditions (Denton et al, 2019).

Aims To investigate breathing patterns within a sample of patients referred to a tertiary Airways service diagnosed with ILO, BPD or both.

Method Records of patients with a diagnosis of BPD (identified by a specialist physiotherapist) over a 12 month period (N=56) were reviewed using purposive sampling to identify people with ILO (diagnosed by laryngoscopy) and those without.