P180 PATIENT REGISTRATION OF COUGH DURING OESOPHAGEAL MONITORING

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doi:10.1136/thx.2009.127183x

Introduction Gastro-oesophageal reflux disease (GORD) is known to be associated with chronic cough. Recent evidence suggests significant temporal associations may occur between cough and reflux events in the absence of other findings suggestive of GORD. During oesophageal monitoring patient symptoms are usually recorded by patient registration, however this may be unreliable.
Aim To assess the accuracy of patient registration of coughing compared with acoustically recorded cough.
Methods We studied 61 patients with chronic cough (>8 week duration) (median age 57.0 years (IQR 49–64), 40 female). During a 24-hour oesophageal reflux monitoring study (pH/impedance, Sandhilll Scientific) patients were instructed to register each bout of coughing by pressing a button on the data logger. Cough sounds were recorded simultaneously (Vitalojak) and a trained observer counted the number of recorded cough bouts (continuous coughing without a 2 s break). Patient-registered coughs were considered correct if they occurred within the 2 min following acoustic coughing.
Results Patients only registered a median of 42.6% (IQR 21.4–61.4) of the acoustically detected cough bouts (median 24.0 bouts (IQR 10.5–37.5) vs 62.0 bouts (IQR 32.5–108.0), $p<0.001$), a median difference of −30 cough bouts (IQR −77.5 to −13.0). Of the patient registered coughs, a median of 90.8% (IQR 76.4–98.6) occurred within 2 min of an acoustically recorded cough bout. A median of 2.0 (IQR 0.5–6.0) registered bouts were unrelated to acoustic coughs and appeared to increase with age. Patients aged 57–79 years registered significantly more cough bouts that did not occur within 2 min after an acoustically recorded cough bout than patients aged 26–56 years (median 4.00 (IQR 1–7) vs median 1.00 (IQR 0–3.5), $p = 0.02$).
Conclusions This study suggests patient registration of cough during oesophageal monitoring is unreliable, the main source of error being patients failing to register the majority of genuine cough bouts. This is likely to have a significant influence on the assessment of the temporal relationships between cough and reflux.

P181 POOR ADHERENCE TO BTS RECOMMENDATIONS FOR THE MANAGEMENT OF COUGH IN ADULTS

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doi:10.1136/thx.2009.127183y

Background Cough is the most common symptom encountered in both primary and secondary care. We analysed data collected from three cough clinics across the UK to assess adherence to the current BTS guidelines prior to referral for a specialist opinion.
Methods Data were collected from new referrals to cough clinics in Belfast, Hull and Manchester. Information was gathered regarding the source of referral (primary or secondary care), sex, age, duration of cough, investigations performed (CXR and spirometry) and use of ACE inhibitors.
Results Data were collected from 177 patients (median age 59 years (IQR 48–65), 66.5% female, median cough duration of 2.5 years (IQR 0.9–7.4); 52 patients from Manchester, 25 from Hull and 100 from Belfast). 100 (56.5%) were referred from primary care. At the time of referral a CXR had been performed in 64.8% of patients, spirometry in 52.0% and home PEFR measurement in 20.5%. ACE inhibitors were being taken by 6.8% of patients.
Conclusions The adherence to the BTS guidelines on cough remains poor, even for mandatory investigations such as CXR and spirometry.

P182 DOES IT MATTER HOW WE BREATHE? PERCEPTIONS IN NORMAL SUBJECTS WHEN ADOPTING DIFFERENT ROUTES OF BREATHING

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doi:10.1136/thx.2009.127183z

Introduction We have recently reported that normal subjects have both quantitative and qualitative differences in ventilation and ventilatory patterns when adopting nasal compared to oral routes for ventilation.[1 2] Minute ventilation and its components (tidal volume, breathing frequency) were reduced by a mean of 33% and followed a shift of thoracoabdominal respiration to favour ''diaphragmatic'' breathing during nasal ventilation and ''upper thoracic cage'' during mouth breathing.
Study The clinical implications of this have been explored in 20 normal subjects (mean age 54 years, range 20–89) at rest (tidal breathing) during a 2× 2-min crossover exercise in which subjects were requested to note their perceptual experiences when randomly allocated initially to either nasal breathing (NB) or, after a break, mouth breathing (MB). The results have been compared with the individual's preferred route of breathing normally.
Results 17/20 (85%) of subjects during NB found the exercise to be comfortable compared with only 10/20 (50%) during MB ($p = 0.04$). During MB, commonly reported symptoms witnessed were discomfort in breathing and breathlessness in 8/20 (40%) and dry mouth in 6/20 (30%). 13/20 (65%) subjects normally preferred to breathe through the nose, 4/20 (20%) expressed no preference and only 3/20 (15%) preferred the mouth. No subject had a positive Nijmegen or Hospital Anxiety Depression (HAD) score.
Conclusions This study has shown that the adoption of MB in normal subjects is associated with the uncomfortable sensation of breathlessness. It provides evidence for our hypothesis that mouth breathing per se, even in normal subjects, may predispose to the perception of breathlessness by dynamically changing chest wall mechanics and thus proprioceptive input. It may also help to explain the success of various physiotherapy exercises including Buteyko.

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P183 GAMMA SCINTIGRAPHY: REGIONS OF INTEREST IN THE LUNGS. ARE WE BEING CONSISTENT IN WHAT WE ARE MEASURING?

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doi:10.1136/thx.2009.127191a

Introduction Two-dimensional gamma scintigraphy (2DGS) is able to quantify the amount of drug delivered from a therapeutic inhaler device to the lungs. To obtain information on the regional lung deposition of inhaled drug, the lung image is divided into several ''regions of interest (ROI)'' that each represent airways of different sizes. Research groups tend to use their preferred method of ROI, which is often different from other centres. Presently, there is no standard method of defining ROI.
Objectives We compare different methods to determine ROI and ask whether the data generated are comparable.
Methods Using our own lung deposition data with 99mTc-labelled 3 μm particle size monodisperse aerosols[1] and lung borders determined

Abstract P183 Table 1

	Central (C)		Intermediate (I)		Peripheral (P)			
Method	Area	Counts	Area	Counts	Area	Counts	C/P	PI
1	18.2	37.3	28.3	38.1	53.5	24.5	1.52	0.40
2	33.0	60.1	0	0	67.0	39.9	1.50	0.46
3	20.2	48.8	0	0	79.8	51.2	0.95	0.47
4	25.0	56.6	0	0	75.0	43.4	1.30	0.47

Values are percentages.
PI, penetration index.

from a krypton-ventilation scan, we compared four reported methods of partitioning the lungs into ROI.[2–5] Percentage lung area in the ROI and radioactive deposition counts for central (C), intermediate (I) and peripheral (P) regions were calculated. The C/P ratio and Penetration Index (PI) were determined (PI = ratio of P/C for the deposition aerosol normalised by P/C for krypton-ventilation gas).

Results Comparisons between the four methods of defining ROI are shown in table 1. All methods defined C as corresponding to central airways and P as peripheral/small airways. The proportionate lung areas of C and P regions and also the radioactive gamma counts varied greatly depending on the method used to define ROI. Only one method defined intermediate regions. However, there was good agreement of PI.

Conclusions PI, which is normalised to lung ventilation, is least affected by how the lung regions/ROI are drawn and analysed. PI should be the primary endpoint to compare results from different scintigraphic lung deposition studies. Care should be taken when comparing individual ROI between studies and attributing these 2DGS regions to specific three-dimensional anatomical airway structures.

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P184 HIGH PREVALENCE OF URINARY INCONTINENCE IN ADULT PATIENTS WITH BRONCHIECTASIS

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doi:10.1136/thx.2009.127191b

Introduction Urinary incontinence (UI) is common in patients with cystic fibrosis (CF)-associated bronchiectasis but limited data are available for patients with non-CF bronchiectasis.[1] Patients suffering with UI are often embarrassed by symptoms and don't seek medical attention,[2] consequently remaining untreated. Department of Health guidelines[3] state that primary and secondary care physicians should identify patients with incontinence problems, offer appropriate assessment and facilitate access to specialist services.

Setting In 2007 a new non-CF bronchiectasis service was started with patients referred from existing chest clinics and primary care. Patients attending were specifically asked about UI symptoms including duration of symptoms. If UI was reported, this prompted a nurse consultant review for UI management.

Results Of the 116 patients attending the bronchiectasis service to date, 76 were female; of these 55% (42 patients, mean age 62 years, range 27–82) had UI (UI-Br). 87.5% of UI-Br patients reported symptoms for over 5 years and 40% of patients described symptoms for over 10 years prior to intervention. 37% reported UI as having a "terrible" effect on quality of life. After assessment, a personalised UI management plan was formulated. All patients received education and patient literature regarding bladder health, training in pelvic floor strengthening, urge suppression and voiding techniques. Other treatments included bladder retraining (40%), toilet rescheduling (40%), bowel care (12.5%) and containment education (25%). A follow-up phone call was made at 4 weeks, providing motivation and support, followed by further clinic appointments linked to bronchiectasis clinic follow-up. Patients reported high compliance rates with treatment plans. A significant proportion of patients have already been discharged from the UI service following an improvement in symptoms.

Conclusion UI is common in patients with non-CF bronchiectasis. It has a significant psychosocial impact on patients' lives and is rarely self-reported; patients suffer with symptoms for years without seeking medical assistance. Therefore it is important that respiratory physicians include UI as part of systematic care of these patients and that patients identified as suffering from symptoms of UI are referred on for specialist input in order to improve continence and quality of life.

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COPD: identification and testing

P185 BRITISH LUNG FOUNDATION'S SEARCH FOR THE "MISSING MILLIONS" OF COPD PATIENTS

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doi:10.1136/thx.2009.127191c

British Lung Foundation (BLF) surveys identified UK hotspots where the most acute admissions for chronic obstructive pulmonary disease (COPD) are expected. Two top hotspots, Nottingham and South Tyneside, were targeted with awareness-raising events. These events were supported by extensive publicity campaigns directed at GPs, pharmacies, community health centres and libraries with local media involvement. In South Tyneside there were also telemarketing campaigns directed towards at-risk groups. Day awareness-raising events were arranged at eight venues—supermarkets, shopping malls or Bingo halls—where spirometry was offered by trained respiratory nurses using Microlab portable spirometers. BTS criteria for acceptable results were used. People without known lung disease were invited to attend.

Complete datasets were obtained from 1273 attendees (table 1). 96% were Caucasian, with mean age 57 years (range 14–95). 60% were smokers or ex-smokers and 40% non-smokers. 20% attendees had abnormal spirometry. 11% had airflow obstruction and 9% had restrictive spirometry. Of 663 aged ⩾35 years with smoking histories, 18% had airflow obstruction while 9% had restrictive