277. New insights in pneumology – ERS inter-Assemblies late-breaking abstracts

P2726

Does adding telemonitoring to optimised management of chronic obstructive pulmonary disease (COPD) reduce hospital admissions? Randomised controlled trial

Hilary Pinnock[1], Lucy McCloughan[2], Allison Todd[2], Janet Hanley[3], Stephanie Lewis[4], Ashma Krishan[4], William MacNee[5], Claudia Pagliari[2], Aziz Sheikh[1], Brian McKinstry[2]. *[1]Allergy & Respiratory Research Group, Centre for Population Health Sciences, The University of Edinburgh, Edinburgh, United Kingdom; [2]eHealth Research Group, Centre for Population Health Sciences, The University of Edinburgh, Edinburgh, United Kingdom; [3]Nursing Midwifery and Social Care, Edinburgh Napier University, Edinburgh, United Kingdom; [4]Edinburgh Clinical Trials Unit, The University of Edinburgh, Edinburgh, United Kingdom; [5]Edinburgh Lung and the Environment Group Initiative, The University of Edinburgh, Edinburgh, United Kingdom*

Introduction: Previous trials of telemonitoring in COPD have been confounded by additional supportive clinical care in the intervention group. It is unclear if telemonitoring alone will improve clinical outcomes
Aim: To determine if telemetrically supported self-monitoring of COPD prevents hospital admissions when both groups receive optimised care.
Trial design: Researcher-blind RCT.
Setting: UK primary care.
Methods: Patients with a COPD admission in the previous year were centrally randomised to telemetric or normal monitoring. The primary outcome, assessed at 1 year, was time to first hospital admission with a COPD exacerbation. Other outcomes included number of days in hospital, deaths and health-related quality of life (St George's Respiratory Questionnaire (SGRQ))
Results: We randomised 256 patients (128 telemonitoring): baseline characteristics were similar. Using an intention-to-treat analysis, there was no difference in time to admission between the groups (adjusted hazard ratio for admission (reference=tele-group) 1.04 (95%CI 0.73 to 1.50). 61 patients in each group had an admission. There was no significant difference in the mean number of of admissions/person (tele-group: 1.2 (SD1.9), control: 1.1 (SD1.6)); bed days (tele-group: 9.4 (SD 19.1) vs usual 8.8 (SD 15.9)); deaths (tele-group: 16, control 21. p=0.38) or SGRQ at 1 year (mean difference: 1.5 (-1.4 to 4.5))
Conclusion: When both groups received optimised care, telemonitoring did not reduce the time to a hospital admission or increase quality of life.
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P2727

Multicenter COPD registry for quality improvement and comparative effectiveness research

Jerry A. Krishnan[1], David H. Au[2], Shannon S. Carson[3], Todd A. Lee[1], Peter K. Lindenauer[4], MaryAnn A. McBurnie[5], Richard A. Mularski[5], Edward T. Naureckas[6], William M. Vollmer[5]. *[1]Medicine, University of Illinois, IL, United States; [2]Medicine, University of Washington/VA Puget Sound Health Care System, Seattle, WA, United States; [3]Medicine, University of North Carolina at Chapel Hill, NC, United States; [4]Center for Quality of Care Research, Baystate Medical Center, Springfield, United States; [5]Center for Health Research, Kaiser Permanente Northwest, Portland, United States; [6]Medicine, University of Chicago, United States*

Rationale: Studies evaluating quality, safety, effectiveness, and costs of care using registries linking Electronic Health Records from diverse healthcare settings are attracting increasing interest because they can provide information more applicable to 'real-world' patients and clinicians.
Methods: The *COPD Outcomes-based Network for Clinical Effectiveness and Research Translation (CONCERT)* developed a multicenter COPD registry (*COPD DataHub*) linking 8 U.S. academic healthcare institutions. Inclusion criteria were based on age (≥40 yrs), ICD-9 billing codes, problem lists, medications, or spirometry from 2006 to 2010. The prevalence of Charlson comorbid conditions was estimated. An in-person study visit was used to collect additional information, including height, weight, smoking status, symptoms, and lung function. Preliminary findings are presented here.
Results: In 226,261 patients, the five most common co-morbid conditions (hospital and outpatient encounters) were diabetes (32 and 23%), heart failure (26 and 11%), renal disease (20 and 9%), malignancy (20 and 12%), and peripheral vascular disease (16 and 8%). In 1,216 patients who completed the study visit, 73% were overweight or obese, 84% were ever smokers, 44% smoked ≥40 pack-years, 34% had chronic bronchitis symptoms, and 54% had fixed airflow obstruction (post-BD $FEV_1/FVC<70\%$).
Conclusions: Quality improvement and comparative effectiveness research in COPD should 1) include lung function testing to confirm the diagnosis, and 2) address a range of comorbid conditions, including overweight or obese body habitus and smoking-related behaviors. Given the high levels of comorbidity, heterogeneous treatment effects appear likely.

P2729

Latin America asthma insight and management (LA AIM): A survey of asthma patients in 4 Latin American countries and Puerto Rico

Jorge Maspero[1], Jose Jardim[2], Alvaro Aranda[3], C. Pablo Tassinari[4]. *[1]Allergy and Respiratory Research Unit, Fundacion CIDEA, Buenos Aires, Argentina; [2]Respiratory Division, Federal University of São Paulo Medical School, Sao Paulo, Brazil; [3]Respiratory, Hospital Auxilio Mutuo, San Juan, Puerto Rico; [4]Institute of Immunology, Universidad Central de Venezuela, Caracas, Venezuela*

Introduction: In 2011, we conducted a comprehensive asthma survey in Latin America to explore realities of living with asthma and identify unmet needs in asthma management. The Latin America Asthma Insight and Management (LA AIM) survey was modeled on similar programs in the United States, Europe and Canada, and the Asia-Pacific region.
Methods: Face-to-face interviews lasting approximately 35min were conducted with respondents in a national probability sample. The survey was included 2000 patients (400 patients/location) in Latin America (Argentina, Brazil, Mexico, Venezuela) and Puerto Rico. Survey questions covered asthma burden; impact of asthma on patients; emotional burden; symptoms; seasonal influences on symptoms; triggers; most bothersome symptoms; and patient perceptions about current levels of control.
Results: More than 51,000 households were screened, and 2169 respondents completed the LA AIM survey across the 5 locations. Respondents were predominantly female (67% for the region, proportion similar in each country). Mean age was 37y (for the region; 35-43y, range across countries). Mean age at diagnosis across locations was 15y; (Argentina:19y; Mexico and Puerto Rico:18y; Brazil:16y; Venezuela:11y). Dust was the most commonly reported trigger (61% overall), followed by change in weather (41% overall).
Conclusions: The LA AIM survey provides a comprehensive view of the state of asthma across 5 distinct Latin American cultures. The survey reveals that asthma has a profound impact on patient health and quality of life, suggesting a continuing unmet need for asthma education in Latin America. Results were primarily similar across the region.

P2730

Cough, active smoking ever, smoking history of >10 packyears and wheezing/chest tightness should prompt COPD suspicion in cardiac patients who remain symptomatic despite adequate management

Marta Kolacinska-Flont[1], Jaroslaw Drozdz[2], Marzenna Zielinska[3], Piotr Kuna[1]. *[1]Clinic of Internal Medicine, Asthma and Allergy, Medical University of Lodz, Lodz, Poland; [2]Clinic of Cardiology, Medical University of Lodz, Lodz, Poland; [3]Clinic of Intensive Cardiac Therapy, Medical University of Lodz, Lodz, Poland*

Background: Coronary heart disease (CHD) and chronic obstructive pulmonary disease (COPD) share common risk factors and often coexist. Dyspnea, effort intolerance and chest tightness in CHD patients are readily attributed to cardiac disorder while COPD passes unnoticed. Proper COPD management optimizes patient's outcome.
Aim: The aim of our study was to determine key features from history and physical examination that should raise COPD suspicion in persistently symptomatic cardiac patients.
Material and methods: Patients were recruited with respect to the following inclusion criteria: angiographically confirmed CHD, adequate cardiac management, ability to visit study site, expressed informed consent for study participation. Subjects were evaluated for: demography, smoking, respiratory complaints (modified ECRHS questionnaire), airflow limitation (spirometry accompanied by reversibility test if applicable). COPD diagnosis was based on clinical presentation, history and post-bronchodilator FEV1/FVC<LLN.
Results: Among 206 subjects eligible for the study 33 (16%) were found to have COPD. COPD vs. non-COPD subjects did not differ in age, sex, BMI, waist circumference and tobacco exposure in general. Active smoking ever (OR 5.45, 95%CI 1.24-23.9), >10 packyears (OR 4.28, 95% CI 1.57-11.7), cough (OR 8.65 95%CI 3.16-23.6) and wheezing/chest tightness (OR 3.38 95%CI 1.51-7.58) significantly increased COPD risk.
Conclusions: Longstanding history of active smoking ever, cough and wheezing/chest tightness in persistently symptomatic cardiac patients should raise the suspicion of concomitant COPD.

P2731

The predictive value of the COPD assessment test (CAT) for acute exacerbations in patients with chronic obstructive pulmonary disease (COPD)

Dimitar Sajkov[1], Ming-Shyan Huang[2], Jian Kang[3], Ching-Hsiung Lin[4], Myung Jae Park[5], Namhee Kwon[6], Sang-Do Lee[7]. *[1]Australian Respiratory and Sleep Medicine Institute, Flinders Medical Centre, Adelaide, Australia; [2]Department of Internal Medicine, Kaohsiung Medical University Hospital, School of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan; [3]The Institute of Respiratory Diseases, The First Affiliated Hospital of China Medical University, Shenyang, China; [4]Division of Chest Medicine, Department of Internal Medicine, Changhua Christian Hospital, Changhua, Taiwan; [5]Division of Respiratory and Critical Care Medicine, Kyung Hee University Hospital, Seoul, Republic of Korea; [6]Asia Pacific Medical, GlaxoSmithKline, Singapore, Singapore; [7]Division of Pulmonary and Critical Care Medicine, Asan Medical Centre, Seoul, Republic of Korea*

Acute exacerbations significantly impair health-related quality of life (QoL) and productivity of patients with COPD. Predicting the probability of exacerbation may help in optimising COPD management. We evaluated whether the COPD Assessment Test (CAT™) could predict the risk of future exacerbations of COPD. COPD patients with a history of exacerbation were recruited from 19 sites in four Asia Pacific countries. CAT score, Medical Research Council (MRC) dyspnea score, spirometry data, medical history, and exacerbation episodes were prospectively collected over six months.

In 495 evaluable patients with a mean age of 69.4±8.8 years, 68% had at least one exacerbation over the study period. The baseline CAT score categorised into four severity groups showed a strong predictive value for time to first exacerbation (Area under the curve [AUC]=0.83). Time to first exacerbation was shorter with worsening category of CAT score (p=0.001; mean 19.9, 15.8, 10.9 and 4.5 weeks for CAT scores categories of 0–9, 10–19, 20–29 and 30–40 respectively; adjusted hazard ratios of 1.0, 1.53, 2.08 and 3.41 respectively). CAT score category, however, had a modest predictive ability for at least one exacerbation (AUC=0.64). The risk of future exacerbations was higher with worsening category of CAT score (p=0.004; adjusted relative risks: 1.0, 1.26, 1.33 and 1.45 respectively). The uncategorised CAT scores, used as a continuous variable, found predictions of similar magnitude.

In outpatients with COPD, the baseline CAT score showed a strong predictive value for time to first exacerbation. It also provided modest prediction of exacerbations in the following six months.

P2732

Sleep-related breathing disorders in patients with schistosomal cor-pulmonale

Yehia Khalil, Emad Ibrahim, Rasha Daabis, Engy El-Nahas. *Chest Department, Alexandria Faculty of Medicine, Alexandria, Egypt*

Schistosmiasis has long been an endemic disease in Egypt and an important cause of pulmonary hypertension.

Objectives: We aimed to investigate the clinical and polysomnographic features of sleep-related breathing disorders (SRBD) in patients with schistosomal cor pulmonal and to evaluate their effects on pulmonary hemodynamics.

Patients and methods: We studied 10 stable patients with schistosomal pulmonary hypertension (mean age was 43.7) and 10 healthy volunteers matched. All underwent overnight polysomnography.

Results: The mean AHI in patients group was 20/h while in the control group it was 2.3/h. 80% of the patients were found to have an AHI >10/h and 60% had moderate to severe sleep apnea (AHI ≥ 15/h). In addition, the majority of the patients (80%) spent > 30% of the night with an arterial oxygen saturation < 90%. SRBD were not correlated with anthropometric measures, spirometry nor with the typical symptoms of SA such as excessive sleepiness as assessed by ESS. More importantly, SRBD were significantly associated with measures of pulmonary hypertension severity, and patients with moderate to severe SA had more impaired cardiovascular function as indicated by more severe right ventricular dilatation (p=0.036) than patients with mild sleep apnea.

Conclusion: SRBD are highly prevalent in patients with schistosomal pulmonary hypertension (PH). Also, the SA severity was correlated with more advanced PH and more severe cardiovascular impairment. Therefore in the evaluation of patients with schistosomal PH, polysomnography or an ambulatory cardiorespiratory sleep study seems justified to identify potentially treatable SRBD that may challenge the already compromised cardiovascular system.

P2733

SIDS and idiopathic ALTE: Genetic similarities

L. Nosetti[1], L. Filonzi[2], C. Magnani[2], V. Mongiardi[1], C. Borghi[1], V. Milan[1], L. Nespoli[1], F. Nonnis Marzano[2]. *[1]Pediatric Clinic, University of Insubria, Varese, Italy; [2]Biology, University of Parma, Italy*

Background: Recent advances in molecular genetics have opened new perspectives in the definition of pathogenic mechanisms of SIDS. Several studies, during the past decade, identified polymorphisms in the serotonin transporter (*5HTT*) (*SLC6A4* encoding 5HTT) as a predisposing factor in infant death.

Aim of the study: This project represents a significant step to add knowledge on the involvement of the serotonin polymorphisms of two different *5HTT* regions (5-HTTLPR, hydroxytryptamine transporter-linked polymorphic region, and Stin2, intron 2 VNTR), the promoter region of MAOA (monoamine oxidase A), and DAT in an Italian SIDS population, ALTE patients, IALTE (idiopathic ALTE) and controls.

Methods: We enrolled 76 infants with an history of Apparent Life Threatening Event, distingued in Idiopathic ALTE (IALTE) and Non Idiopathic ALTE (ALTE) by clinical, diagnostic and therapeutic data (12 channels polysomnography E-Series Compumedics). Genotypes and allelic frequencies of DAT, MAOA and 5HTT were determined in ALTE and IALTE infants compared with data obtained from 150 healthy controls.

Results: No association was found between DAT polmorphysm and ALTE/IALTE groups either in the genotype (p=0.25; p=0.112) nor in the allelic frequence (p=0.94;P=0.88). The comparison of MAOA genotypes and allelic frequence between ALTE and control group was not significant, on the opposite the comparison between IALTE and control group was statistically significant for the genotypes (P=0.09) and a tendency for allele (p=0.036). Analisys of 5HTT polymorphisms in IALTE remarked the pathogenetic role of L/L genotype (P<0.00001) and L allele (P<0.00001) as previously demostrated in SIDS.

P2734

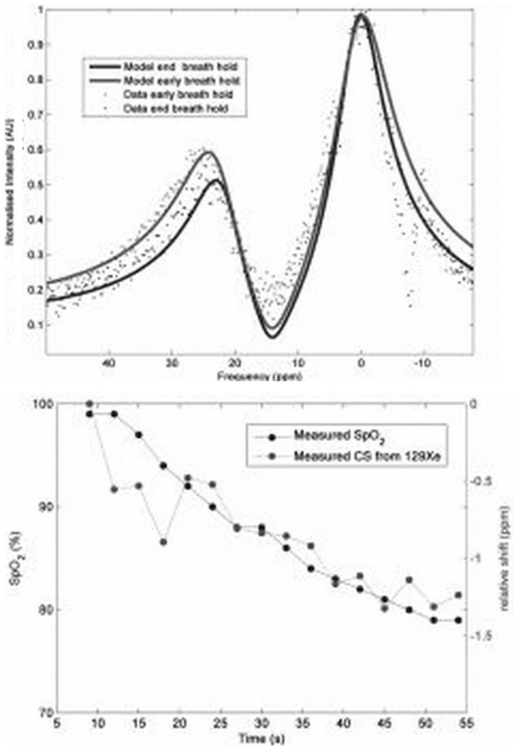
Measuring red blood cell oxygenation in vivo using hyperpolarized 129Xe MRI

General Leung, Graham Norquay, Juan Parra-Robles, Jim Wild. *Royal Hallamshire Hospital, Sheffield, Great Britain, United Kingdom*

Introduction: Red blood cell (RBC) oxygenation plays an important role in cell survival. However, measuring this parameter in deep tissues is difficult. We report a method of detecting RBC oxygenation *in vivo* using MRI chemical shift (CS) of hyperpolarized (HP) 129Xe dissolved in RBCs explored previously *in vitro* (Mag Res Med 43;4(491) 2000).

Methods: 400mL of HP 129Xe mixed with 600mL N_2 was delivered to 3 healthy volunteers who inhaled the gas and held their breath. Spectroscopy was performed on a 3T Philips Intera every 3 seconds for the length of the breath hold. CS was extracted from fits to the spectra. Surrogate oxygenation was measured using an SpO_2 monitor.

Results: Example spectra from one volunteer early(red) and at end of breath hold(blue) are shown in Fig 1(left). The CS change between the tissue/plasma and the RBC peak are plot as a function of time(green) in the panel right along with measured SpO_2(blue). A decrease in the separation between these two peaks is seen over the course of the breath hold corresponding with a measured decrease in SpO_2. Similar trends are seen in data from all subjects.



Discussion: The CS decrease with breath hold time correlates with *in vitro* data showing CS decrease with RBC deoxygenation. To our knowledge, this is the first demonstration in humans of the effect of RBC oxygenation on the CS of dissolved 129Xe. Localisation of this technique may provide insight into regional RBC oxygen non invasively.

P2735

Circulating collagen indices indicative of disease severity in pulmonary arterial hypertension

Zeenat Safdar. *Suite 11B.09, Houston, TX, United States*

Procollagen deposition occurs in explanted pulmonary arterial hypertension (PAH) lungs. Biochemical monitoring of collagen synthesis may provide a non-invasive method of determining vascular remodeling. However, there is lack of data regarding circulating procollagen indices in PAH. We obtained circulating levels of carboxyl-terminal of procollagen type III (PIIINP), carboxy-terminal telopeptide of collagen type I (CITP), matrix metalloproteinase-9 (MMP-9) and tissue inhibitor of metalloproteinase-1 (TIMP-1) from 87 PAH subjects and 37 age- and gender-matched controls (Baylor PH Center). Serum was separated and stored at -80°C. CITP, MMP-1 and TIMP-1 levels were measured by ELISAs. PIIINP was measured by antibody radioimmunoassay. PAH patients had elevated PIIINP, CITP, MMP-9 and TIMP-1 levels suggesting active collagen metabolism (Table 1). PIIINP levels were higher in WHO FC III-IV as compared to WHO FC I-II PAH patients (p=0.011). PIIINP levels negatively correlated with six-minute walk distance (R=-0.3, P=0.008), and positively correlated with right atrial pressure (R=0.35, P=0.002) and BNP levels (R=0.25, P=0.02).

Clinical characteristics and biomarker levels in PAH patients

	Controls	PAH	p value
Age (yrs)	49.14±14	47.14±14	0.34
Gender (F, %)	33 (89)	79 (90)	
BSA (m^2)	1.79±0.24	1.83±0.19	0.36
Pulse pressure (mm Hg)	36.6±17	37.6±17	0.82
6MWD (meters)	468±63	412±106	0.005
BNP (pg/ml)	19.9±19	138±202	0.002
PIIINP (ng/ml)	3.80±0.92	5.2±1.88	<0.001
MMP-9 (ng/ml)	291.5±171	478±292	<0.001
TIMP-1 (ng/ml)	128±34	202±63	<0.001
CITP (ng/ml)	2.20±1.2	4.03±2.33	<0.001

Circulating procollagen markers may provide a novel non-invasive method of documenting active collagen synthesis reflective of severe disease in PAH.

P2736

Development of an intervention algorithm in telemetrically supervised adaptation of positive airway pressure therapy for OSAS

Otto D. Schoch, Florent Baty, Jolanda Niedermann, Jochen J. Rüdiger, Martin H. Brutsche. *Fachbereich Pneumologie, Schlafmedizin und Heimbeatmung, St. Gallen, Switzerland*

Introduction: The acceptance of positive airway pressure therapy (PAP) is a major clue to successful OSAS therapy. Telemedicine is a novel tool to supervise PAP use at the patient's home. We report on treatment results with an intervention scheme developed to guide patients during the first month of telemetrically supervised PAP adaptation.
Methods: After mask adaptation and explanation of the PAP devices (ResMed S9), newly diagnosed OSAS patients were equipped with telemedicine (ResTraxx Online™, ResMed) for the first month of therapy. The automatically downloaded hours of PAP use and leak flow were checked 3 days per week. Patients received phone calls after 2 nights of <4h usage or average leak >0.4L/s. Technical problems, number and duration of phone calls and CPAP use information were analysed.
Results: During the study period, 73 OSAS patients received telemedicine for a total of 2045 nights. Minor technical problems with data transmission for 1 to 3 nights occurred in 12(16%) patients. The average PAP use was 4.2±3.4h/night. In 430 nights (21%), PAP was not used, hence, usage was 5.4±3.5h for nights on PAP. PAP use of >0h was detected in 74%, >4h in 55% of patients. A total of 174 calls, average duration 14 minutes, were performed in 53 (72%) patients, range 1 to 15 calls/patient. After 1 month, 62 (85%) OSAS patients continued PAP.
Conclusion: Telemedicine for the introduction of PAP in OSAS is technically feasible. Our intervention algorithm resulted in phone calls for the majority of patients. To determine the direct effects of telemedicine on PAP acceptance, a randomised prospective study is necessary.

P2737

BNN27, a synthetic derivative of dehydroepiandrosterone, suppresses allergic airway disease

Maria Aggelakopoulou[1], Angeliki Malamou[1], Davina C.M. Simoes[1], Ioannis Charalampopoulos[2], Achille Gravanis[2], Vily Panoutsakopoulou[1]. *[1]Center for Basic Research I, Biomedical Research Foundation, Academy of Athens, Athens, Greece; [2]Department of Pharmacology, University of Crete & Foundation of Research Technology-Hellas (IESL-FORTH), Heraklion, Greece*

Neurosteroids comprise a family of endogenous steroid hormones mainly known for their role in neuronal development and survival. A member of this family, dehydroepiandrosterone (DHEA), exhibits anti-inflammatory effects. Although DHEA could be beneficial in allergy, long-term administration of this molecule may induce side-effects, as it metabolizes into other steroids such as androgens and estrogens. Thus, we tested the effects of a DHEA-synthetic-analog BNN27 that does not metabolize to steroids, on allergic airway inflammation and allergic immune responses.For this we used a well-established mouse model for allergic asthma. Our results demonstrate that administration of BNN27 significantly suppressed allergic disease and the immune responses that mediate it. This included suppressed airway hyperresponsiveness, decreased pulmonary eosinophilia, suppressed allergen-specific IL-4 and IL-13 production, as well as significantly decreased allergen–specific IgE. Moreover, allergic mice treated with BNN27 had increased numbers of $CD3^+$ $CD4^+CD25^+$ $Foxp3^+$ T regulatory cells and suppressive $CD11c^+$ $PDCA\text{-}1^+$ plasmacytoid dendritic cells.We also found that BNN27 suppressed Th2 responses *in vitro*. We conclude that administration of the synthetic neurosteroid BNN27 has a significant immunomodulatory effect and protects from allergic airway inflammation.

P2738

Safety profile and pharmacokinetics of an inhaled GATA-3-specific DNAzyme in a first-in man study in healthy subjects

Wolfgang Timmer[2], Klaus Kutz[3], Gerhard Schlüter[4], Friedeborg Seitz[2], Uwe Wannenwetsch[2], Jens Kuhlmann[1], Manuela Stauss-Grabo[5], Anja Zensi[5], Oliver Schmidt[5], Gerhard Breipohl[6], Harald Renz[7], Joachim Bille[1], Ursula Homburg[1], Holger Garn[8]. *[1]R&D, Sterna Biologicals GmbH, Marburg, Germany; [2]Clinical Research Services, CRS Clinical Research Services Mannheim GmbH, Mannheim, Germany; [3]Advisor Clinical Pharmacology, AccelPharm, Basel, Switzerland; [4]Consultant Toxicology, GS, Wuppertal, Germany; [5]R&D, Engelhard Arzneimittel GmbH & Co KG, Niederdorfelden, Germany; [6]Chemistry, Manufacturing & Controls Consulting, GB, Hilden, Germany; [7]University Hospital Giessen and Marburg GmbH, Institute of Laboratory Medicine and Pathobiochemistry, Philipps University Marburg, Marburg, Germany; [8]Institute of Laboratory Medicine and Pathobiochemistry, Philipps University Marburg, Marburg, Germany*

SB010 (a nebulization solution of the human GATA-3-specific DNAzyme hgd40) has been developed and preclinically characterized as an intended treatment of Th2-driven asthma. DNAzymes are single-stranded catalytic DNA molecules that specifically bind and cleave target mRNA sequences. Aim of the present study was to investigate safety, tolerability and pharmacokinetics of orally inhaled single ascending doses of SB010 in a First-in-Man Phase I clinical trial. The study was performed as a randomized, double-blind, placebo controlled, parallel group (per dose level) dose-escalation study in 46 adult healthy male Caucasian subjects (18-45 years). SB010 was applied as nebulized solution via a controlled breathing system (AKITA2 APIXNEB®) in 6 dose levels ranging from 0.4 – 40 mg. Adverse events, vital signs, clinical chemistry, hematology, urinalysis, ECG, pulmonary function testing, body temperature, and overall tolerability were assessed. Plasma concentrations were analyzed using a hgd40-specific hybridization ELISA system. All doses were well tolerated, no serious or severe adverse events and no dose limiting effects were observed. Occasional adverse events (such as headache or cough) were of minor clinical relevance and were fully reversible during the study period. Maximum plasma concentrations of hgd40 were detected within the highest dose group at one hour after administration (29.2 pg/mL ± 20.6) and hgd40 was no longer detectable at time point 12 hours after administration. Overall, inhaled SB010 turned out to be well tolerated after single inhalative exposure in healthy male subjects and is now under evaluation in subsequent clinical studies.

P2739

Repeatability of the endurance shuttle walk test in COPD

Shirley Ngai[1], Jennifer Alison[2,3], Lissa Spencer[3], Alice Jones[1]. *[1]Department of Rehabilitation Sciences, The Hong Kong Polytechnic University, Hong Kong, Hong Kong; [2]Discipline of Physiotherapy, The University of Sydney, NSW, Australia; [3]Department of Physiotherapy, Royal Prince Alfred Hospital, Sydney, NSW, Australia*

The aim was to evaluate the repeatability of the endurance shuttle walk test (ESWT) measured within the same day, within the same week and a week apart.
Methods: Individuals diagnosed with COPD were recruited. Participants were asked to perform two incremental shuttle walk tests (ISWT) for predicting the walking intensity for the ESWT. ESWT 1 (E_1) and ESWT 2 (E_2) were performed on the same day, 30 minutes apart. ESWT 3 (E_3) was performed within a week from E_2 and ESWT 4 (E_4) was performed one week after E_3. Heart rate (HR) (Polar RS800CX, Polar, Finland) and dyspnoea (Borg scale 0-10) were measured before and after each ESWT. Duration walked in each ESWT was measured and the corresponding walking distance was calculated. The repeatability of the four ESWTs was analyzed using repeated measures ANOVA.
Results: Twenty-two participants (mean ± SD age 71±6 years; FEV_1% predicted 54±24%; TLC 122±21%) completed the study. The mean durations of E_1 to E_4 were 368±203s, 371±182s, 386±213s and 367±223s respectively, with no time effect (F= 0.18, p=0.79). The corresponding distances walked in E_1 to E_4 were 474±300m, 478±267m, 511±349m, 487±358m respectively, with no time effect (F=0.36, p=0.65). The percentage predicted HR_{max} at the end of E_1 to E_4 were 79±9%, 80±11%, 82±9%, 80±9% respectively, with no significant time effect (F=1.94, p=0.13).
Conclusion: There was no evidence of a learning effect when an ESWT was repeated within one day, within one week or a week apart, showing that the ESWT is repeatable in people with moderate COPD.

P2740

Prevention of RSV infection in infants from the high-risk groups in Moscow: The first season's results

Dmitriy Ovsyannikov[1], Irina Krsheminskaya[1], Elena Degtyareva[2]. [1]*Medical Faculty, People's Friendship University of Russia, Moscow, Russian Federation;* [2]*Pulmonology Department, Children's Infectious Diseases Hospital No. 6, Moscow, Russian Federation*

Aim: Analysis of efficacy and safety of immunization with palivizumab of infants from the high-risk groups of severe respiratory syncytial viral (RSV) infection carried out during 2012 infection season in Moscow.
Methods and materials: Immunization against RSV infection with palivizumab was conducted for the first time in six Moscow hospitals from January to May 2012. The total number of infants immunized was 156 aged from 15 days to 1 year 11 months. Patients received from 1 to 4 shots with treatment-free interval 30±5 days: 1 infant was immunized four times, 139 – three times, 9 children – twice, 7 children – once. The reasons for discontinuation of immunization after 1 and 2 shots were not connected to medical conditions. 139 (89,1%) of all infants were premature, including 42 (26,92%) - with extremely low birth weight, 83 (53,21%) - with bronchopulmonary disease, 19 (12,18%) - with congenital heart diseases. Efficacy of immunization was estimated on a basis of the average monthly frequency of lower respiratory tract infections and hospitalization within three months ahead and three months during prophylaxis. A frequency of adverse events was used for safety analysis.
Results: Immunization with palivizumab led to decrease of the average monthly frequency of lower respiratory tract infections (from 0,064 to 0,014) and hospitalization (from 0,048 to 0,01). The following adverse events were reported: short-term, low-grade fever, anxiety, rhinitis, upper respiratory tract infection, gastroenteritis. There were no serious adverse events reported during prophylaxis.
Conclusions: Prophylaxis of RSV infection with palivizumab in infants from the high-risk groups is safe and effective.

P2741

Association of airway bacterial load with inhaled corticosteroid dosage in stable COPD

Davinder Garcha[1], Sarah Thurston[1], Anant Patel[1], Alexander Mackay[1], James Goldring[1], Tim McHugh[2], Gavin Donaldson[1], Jadwiga Wedzicha[1]. [1]*Academic Unit of Respiratory Medicine, University College, London, United Kingdom;* [2]*Centre for Medical Microbiology, Royal Free and University College Medical School, London, United Kingdom*

Inhaled corticosteroids (ICS) are commonly used in COPD, either alone or in combination with bronchodilators to reduce exacerbation frequency, but may also increase risk of pneumonia (Calverley et al, NEJM, 2007; Wedzicha et al, AJRCCM, 2008) which is not well understood. Lower airway bacterial colonisation is often present in stable COPD and may predispose to pneumonia. We investigated the relationship between airway bacterial load and ICS dose in stable COPD patients.
We quantified typical bacterial load using a validated PCR (for *H. influenzae, S. pneumoniae, M. catarrhalis*) from the sputum of 47 stable COPD patients positive for at least one of these species. Patient characteristics: Mean(SD) age 71.6(8.0) years; Male gender 64%; Current smoker 34%; FEV_1 49.0(18.4)% predicted. Median (IQR) beclomethasone-equivalent dosage was 2000 (640-2000) μg daily. Higher airway bacterial load was correlated to higher ICS dosage (corrected for beclomethasone equivalence) in a univariate analysis; r=0.382; p=0.008 (Fig. 1). This relationship remains significant in a multivariate analysis including age, smoking status and FEV_1 % predicted (p=0.022).

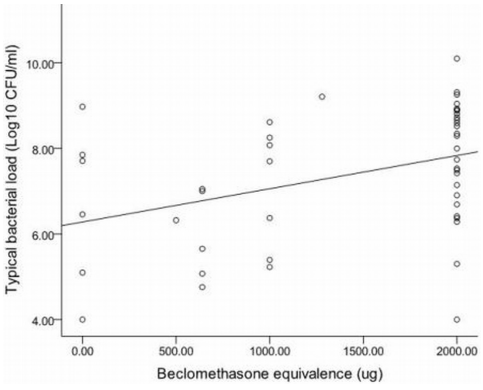


Figure 1

For the first time we have shown that the use of high ICS dose is associated with higher airway bacterial load and may therefore play a part in increasing susceptibility to pneumonia in COPD.

P2742

Pleural irrigation trial (PIT): Standard care versus pleural irrigation, a randomised controlled trial in patients with pleural infection

Clare Hooper[1], Antony Edey[2], Adam Wallis[2], Amelia Clive[1], Anna Morley[3], Mike Darby[2], Natalie Zahan[3], Andrew Medford[3], Nick Maskell[1]. [1]*Academic Respiratory Unit, School of Clinical Sciences, University of Bristol, Bristol, United Kingdom;* [2]*Department of Radiology, Southmead Hospital, North Bristol NHS Trust, Bristol, United Kingdom;* [3]*Pleural Clinical Trials Unit, Southmead Hospital, North Bristol NHS Trust, Bristol, United Kingdom*

Background: Pleural infection remains common with an increasing incidence and high mortality. Despite chest tube drainage and antibiotic therapy up to 30% of patients will die or require surgery. Case reports suggest that irrigation of the pleural space with saline may be beneficial but this has never been the tested in the form of a randomised controlled trial
Method: Randomised controlled pilot study comparing standard care plus saline irrigation, with best standard care alone, in patients with pleural infection requiring chest tube drainage, who had a residual pleural collection on baseline CT thorax. Primary outcome was percentage change in CT pleural volume from day 0 to day 3. Secondary outcomes included referral for surgery, hospital stay & adverse events
Results: 65 patients approached, 38 randomised, 3 excluded. Saline irrigation resulted in significant reduction in CT pleural collection volume compared to standard care – Irrigation group 29.2% reduction (95% CI 16.2- 62) vs Standard care 13.9% (95% CI -4.1- 26.3) p<0.04. There was also a significant reduction in the need for thoracic surgery in the irrigation group 2/18 vs 9/17 p=0.01 (OR 9.0, 95% CI 1.6-51.9). No differences were seen in length of hospital stay or fall in inflammatory markers (CPR, WCC and procalcitonin). Safety profile of saline irrigation was good with no serious complications and similar adverse events between groups.
Conclusion: Saline irrigation improves fluid drainage in pleural infection, leading to reduction in referral for surgery. This study now needs to be repeated as a large multicentre RCT using the hard endpoints of mortality and length of hospital stay.