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274. *Pseudomonas aeruginosa* infection and non-cystic fibrosis bronchiectasis

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Health status impact of ciprofloxacin dry powder for inhalation in patients with non-cystic fibrosis bronchiectasis

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Introduction: Potentially pathogenic microorganisms (PPMs) frequently colonize lungs of bronchiectatic patients, often leading to pulmonary exacerbations. This phase II, randomized, double-blind study assessed the safety and efficacy of ciprofloxacin dry powder for inhalation (DPI) – a formulation (PulmoSphere™) using the T-326 inhaler – over 28 days in patients with sputum culture positive for predefined PPMs.

Objective: To test the effect of ciprofloxacin DPI on bacterial load and health status in non-cystic fibrosis bronchiectasis (non-CF BE) patients.

Methods: 124 adult, non-CF BE patients (mean baseline characteristics: age 63, 34% male, FEV1 56% of predicted) received 32.5mg ciprofloxacin (50 mg ciprofloxacin DPI) or matching placebo twice daily for 28 days with a 56-day follow-up. In addition to the primary endpoint (reduction in total bacterial load in sputum at end of treatment [EOT]), patient-reported health status was assessed with the St George's Respiratory Questionnaire (SGRQ).

Results: Ciprofloxacin DPI reduced bacterial load at EOT (−3.6 vs −0.3 logs, $p < 0.001$). The difference in mean SGRQ total score between active and placebo was −3.6 ($p = 0.059$, 95% confidence interval −7.3 to 0.1), close to a clinically relevant (−4) improvement. The trend lasted for 4 weeks after EOT (difference −3.0) but was not maintained at 8 weeks after EOT (difference −0.83). SGRQ domain scores, responder and per-protocol analyses confirmed the trend.

Conclusions: Ciprofloxacin DPI clearly trended towards improving patient-reported health status in non-CF BE measured with the SGRQ, which lasted for 4 weeks after treatment finished. Further study is required to confirm the results.

P2535

Pseudomonas aeruginosa sensitivity changes to antibiotics under the influence of dissolved ozone

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Aim: To study the sensitivity changes of clinical strains of organisms producing beta-lactamases to antibiotics under the influence of dissolved ozone (pO3).

Methods: We studied 20 *Pseudomonas aeruginosa* strains resistant to antibiotics of penicillin line. A suspension was prepared from the culture of each strain ($1-2 \times 10^8$ /ml) and treated with dissolved ozone (pO3 2mcg/ml) during 5-10-15 min. Then, the strains treated with pO3 were cultured on Muller-Hinton agar containing a strain resistant antibiotic. The same strain that had not been treated with pO3 was also cultured on the same agar containing the same antibiotic (control). In a day after incubation by 37°C we recorded the result of the diameter zone of growth inhibition round the antibiotic disc.

Results: The zone of growth inhibition round the antibiotic disc increased from 0 to 21.6 ± 3.5 mm in all cases of *Pseudomonas aeruginosa* strain culture. There were no growth changes in control cultures.

Conclusion: The treatment of resistant strains of *Pseudomonas aeruginosa* with "therapeutic concentration" of dissolved ozone results in antibiotic sensitivity restoration.

P2536

Influence of antibiotic resistance of *pseudomonas aeruginosa* on presenting features of community-acquired lower respiratory tract infections

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Aim: To evaluate the influence of resistant isolates of *Pseudomonas aeruginosa* on presenting features for patients with community-acquired lower respiratory tract infections (LRTIs).

Methods: 95 hospitalized patients (67 men, 28 women, average age 66.7 ± 10.9 y)

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with community acquired pneumonia (CAP), bronchiectasis and exacerbations of chronic obstructive pulmonary disease (COPD) and *Pseudomonas aeruginosa* isolates were studied during a 5-year period. They were divided into two groups: with susceptible isolates, ($n_1=70$, 73.7%, S group) and resistant to antibiotic testing, ($n_2=25$, 26.3%, R group) and compared by sex, age, diagnosis, concomitant diseases, treatment, length of stay, outcome.

Results: 14.7% of the patients had CAP, 46.3% - bronchiectasis and 40% - COPD. Most of them had concomitant diseases - ischaemic heart disease: S/R - 62.4%/62% resp., diabetes - S/R - 11%/12% resp. We found differences in: the change of antibiotic treatment according to the microbiological results (8% S/36% R, $p<0.005$); length of hospital stay >15 days - 3% S/12% R respectively, $p<0.05$. Complications of the essential disease were more in the R group (2% S/4% R). The outcome was similar in both groups.

Conclusions: The clinical features found in patients with resistant isolates of *P. aeruginosa* compared to susceptible ones were: more complications of the main disease, more frequent change of antibiotics during the course of treatment according to the microbiological results and longer length of stay.

P2537

Nebulized antibiotics in patients with non-cystic fibrosis bronchiectasis and chronic pseudomonas aeruginosa infection

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Methods: Retrospective review of patients with bronchiectasis with *Pseudomonas aeruginosa* (PA) isolated from sputum at least twice during the year prior to nebulized antibiotic (NA) onset and a minimum 6-month follow-up.

Results: 17 patients included (9 men), median age 69.7 yrs, average follow-up 753 days (183-1824). Nine patients received more than 1 NA during follow-up (31 NA courses in total): 16 colistin, 14 tobramycin, 1 gentamicin. Average treatment duration: 492.5 days (100-971).

Subjective improvement was referred by 12 patients (70.5%). Eradication of PA was achieved in 7 (41.2%), but 1 relapse occurred. 8 patients presented side effects at any time during NA (47%), mainly bronchospasm.

Table 1 shows a reduction in mean number of admissions/year and mean days of admission/year for all patients. A statistically significant reduction is observed when PA was eradicated.

		Period prior to NA*	Period after NA*	Difference between periods**	p***
All patients (n=17)	Admissions/year	2.24 (2.17)	1.5 (1.53)	0.73 (0-1.97)	0.17
	Days in hospital/year	31.35 (39.1)	16.58 (17.53)	14.7 (0-36)	0.22
Patients with PA eradication (n=6)	Admissions/year	3 (1.67)	1.07 (1.27)	1.9 (0.3-3.5)	<0.05
	Days in hospital/year	51.67 (54.4)	10.64 (12)	41 (0-97)	0.12

Results expressed as mean and SD (*) or CI 95% (**). ***Within subjects paired T-Test for comparing means.

Conclusions: 1. NA resulted in clinical improvement in 70.5% of cases and in eradication of PA in 41.2%. Side effects were observed in 47% of cases. 2. NA reduced number and days of admissions in all patients. A statistically significant reduction was observed if PA was eradicated in whom NA prevented nearly 2 admissions/year.

P2538

Mannose binding lectin deficiency is associated with disease severity in patients with non-cystic fibrosis bronchiectasis

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Background: Mannose binding lectin (MBL) is a serum protein involved in phagocytic clearance of bacteria, viruses and apoptotic cells. Deficiency of mannose binding lectin is associated with disease severity in cystic fibrosis bronchiectasis but has not been studied in adult non-cystic fibrosis bronchiectasis.

Methods: 470 patients with adult non-cystic fibrosis bronchiectasis (confirmed by HCRT) and matched controls were recruited. MBL serum levels were measured by ELISA. MBL deficiency was defined as a serum level $<0.5\mu\text{g/ml}$. Quantitative microbiology was performed on spontaneous sputum samples to determine bacterial load- expressed as Log₁₀ colony forming units/ml (cfu/ml).

Results: MBL deficiency was not more frequent in bronchiectasis patients than controls (27.2% vs. 29.6%, $p=0.4$). MBL deficient patients had more severe disease as defined by radiology (39.8% vs. 19.3%, $p<0.0001$). They suffered more frequent exacerbations (mean 2.8/year vs. 1.4/year, $p<0.0001$) and were more frequently

hospitalised for severe exacerbations (31.3% hospitalised vs. 18.1% hospitalised during follow-up). MBL deficient patients more frequently met the criteria for chronic colonisation (70.3% vs. 51.5%, $p=0.002$). Among those colonised, MBL deficient patients had a higher airway bacterial load (7.2 sd 3.1 cfu/ml vs 6.37 sd 3.3 cfu/ml, $p=0.001$). MBL deficient patients were also more frequently colonised with *Pseudomonas aeruginosa* (22.7% vs. 12.3%, $p=0.005$).

Conclusion: Mannose binding lectin deficiency is associated with more severe disease in patients with non-cystic fibrosis bronchiectasis.

P2539

Effects of subinhibitory concentrations of antibiotics on the biofilm formation of pseudomonas aeruginosa

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Objective: To study the effects of the subinhibitory concentrations of four antibiotics on the biofilm formation of *pseudomonas aeruginosa*.

Methods: 2 types of culture media of 1-broth (LB) and mueller-hinton broth (MHB) were used with the application of static biofilms model of *pseudomonas aeruginosa*.

Results: (1) The results of the static-made biofilm were as follows: in the MHB media, azithromycin could induce the biofilm formation of PAO1 when the concentrations were more than 16ug/ml, but inhibited the biofilm formation when the concentrations were less than 8ug/ml. When the PAO1 was cultured in LB, azithromycin would induce the biofilm formation at the sub-MIC concentrations. Ciprofloxacin and ceftazidime could inhibit the biofilm formation at the sub-mic concentration. Amikacin could induce biofilm formation at the concentration of 0.125 and 0.25ug/ml cultured in MHB and LB respectively. All the results above had statistical difference compared with the blank. The Furanone C-30 was added in the static biofilm model with the azithromycin concentration 8ug/ml and 4ug/ml; the results had no statistical difference. (3) Silver staining results: when the concentration of azithromycin was 8ug/ml, the formation of the biofilm was the most, the second was blank and the least was 256ug/ml.

Conclusions: The sensitivity of the azithromycin to the POAI was different with changing of the environment. Azithromycin could induce the biofilm formation at the subinhibitory concentration. Ciprofloxacin and ceftazidime could inhibit the biofilm formation; amikacin could induce the biofilm formation at the concentration of 0.125ug/ml and 0.25ug/ml.

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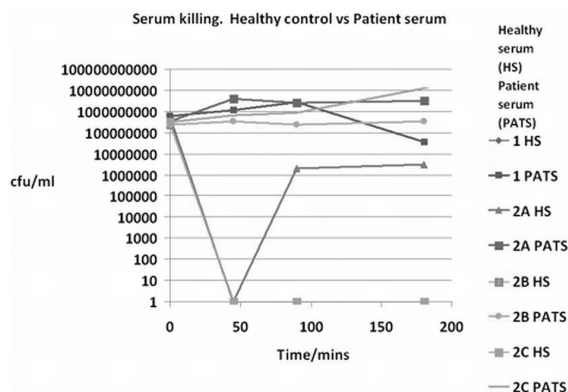
Serum bactericidal activity in non cystic fibrosis bronchiectasis in patients with pseudomonas aeruginosa colonisation

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Background: *Pseudomonas aeruginosa* (PA) colonisation is commonly encountered and problematic in patients with nonCF bronchiectasis. Inhibitory factors in the serum of patients with CF and chronic PA infection which impair phagocytosis of PA have previously been identified with IgG2 proposed to act as a blocking antibody. We have investigated this concept further in patients with non CF bronchiectasis.

Methods: Stable state serum and sputum collected from 11 patients with non CF bronchiectasis colonised with PA. 33 morphological strains of PA identified from this group. Control serum was obtained from healthy individuals for comparison. Stationary phase bacterial cultures were prepared and 10μL inoculum added to 90μL of healthy control and patient serum and incubated at 37°C. At 3 time intervals (45, 90, 180 mins) the serum/inoculum mixture underwent serial dilution and a miles+misra plate prepared for each strain at every time point at 4 dilutions. This was incubated overnight at 37°C and colonies analysed to observe the serum killing trend.

Results: Serum from 2 patients was demonstrated to have blocking activity against 4 strains of PA isolated from these patients.



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Conclusion: The concept of blocking activity in the serum of patients with non CF bronchiectasis may provide some explanation for the mechanism of establishment of PA colonisation in the airways of some patients and requires further investigation.

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Sputum neutrophils are related to functional status in non-cystic fibrosis bronchiectasis in subjects in airway colonization

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In 42 subjects with bronchiectasis (13 male, mean age 62.4 yrs, 32 non smokers, 9 ex and 1 current smoker), functional status and airway inflammation were measured. All subjects showed diffuse bronchiectasis (cystic in 3 subjects), pulmonary consolidations in 30, and peri-bronchiectasis essudations in 29 subjects. Bronchiectasis were idiopathic in 22, post-infectious in 15, post-TB in 5 patients. Bacterial airway colonization was demonstrated in 20 out of 32 subjects collecting sputum (8 *Pseudomonas*, 2 NTMB, 5 *Proteus/E.coli*, 4 *Stafilococcus*, 1 *Hemophilus infl.*, 1 *Streptococcus*). Obstructive syndrome was found in 28 subjects, restrictive syndrome in 2, and normal spirometry in 12. Hypertonic saline-induced sputum was collected in 36 subjects: 29 showed increased neutrophil% (median 79.9%), while 5 subjects showed increased eosinophil%. All except 5 out of 34 subjects showed normal values in exhaled nitric oxide (17.5 ± 16.1 ppb). Significant correlations were found between sputum neutrophil% and FEV1% pred, FEV1/VC% pred, and RV% pred. These significant correlations were maintained considering subjects with airway colonization, but not in subjects without it.

Correlation between Sputum Neutrophil % and functional findings (r, p)

	FEV1 % pred	FEV1/VC % pred	VR % pred
All patients	-0.64, <0.0001	-0.54, 0.0006	0.56, 0.0004
Airway colonization	-0.66, 0.001	-0.48, 0.03	0.49, 0.03
No airway colonization	-0.40, n.s.	-0.39, n.s.	0.37, n.s.

In conclusion, significant relationships between sputum neutrophils, and functional findings were found in patients with bronchiectasis and bacterial airway colonization, suggesting that the last one has a role in pulmonary function impairment.

P2542

Survey of microbiology, pseudomonas eradication and antimicrobial prophylaxis in adult patients with non-cystic fibrosis bronchiectasis

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Introduction: Recent guidelines on non-CF bronchiectasis advocate the use of prophylactic antibiotics in frequent exacerbators, and eradication of *Pseudomonas Aeruginosa* (PA) on first isolation in sputum. We examined the sputum microbiology and antimicrobial treatment in a cross-section of patients seen within our respiratory service.

Methods: Data was collected on all patients seen for routine follow up of non-CF Bronchiectasis for 4 months. We analysed PA status; Prior attempts at eradication of PA; The use of prophylactic antibiotics; and sputum microbiology for the preceding 5 years.

Results: 210 patients were included. The commonest bacterial isolate over the 5 years, other than PA (36%), was *Haemophilus influenzae* (27%). 48 had positive cultures for PA in the previous 12 months. 40 patients grew PA for more than one year's duration. Eradication had been attempted in 62% of the patients who grew PA. Regimens included Ciprofloxacin (28%), nebulised colomycin (23%), and a combination of both (26%).

78 (37%) patients were on prophylactic antibiotics, with thrice weekly Azithromycin being used in 61 patients. 47% had been positive for PA at some point. Data for annual exacerbation rates was not available.

Conclusions: PA was cultured in just over a third of patients, with approximately two thirds of these having undergone some attempt at PA eradication using methods in line with recently published guidelines. Only 38% of those remained clear of PA for more than 1 year afterwards. Approximately 50% of patients on prophylactic antibiotics had no recent isolation of PA, although exacerbation rate data was not included in this survey.

P2543

Inhaled antibiotic treatment. Tolerance, compliance and quality of life

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Multicenter, prospective, observational, analytical cohort study.

Objective: To compare tolerance, quality of life and compliance in self-administration of antibiotics, by jet nebulizers or electronic devices.

Material and methods: Adult patients with bronchiectasis (BQ) of any etiology, with chronic bronchial infection by *P. aeruginosa* following nebulized antibiotic treatment by a jet nebulizer and high flow compressor for at least two months before being included in the study. The selection of patients was carried out consecutively for outclinic patients diagnosed of bronchiectasis in every Respiratory Department participating in the study. Clinical data and respiratory function were recorded. Compliance, tolerance and quality of life questionnaires (St George and SF36) before and after every period of treatment were also requested. The data given by an electronic device in the electronic nebulizer giving doses information and drug administration periods were recorded.

Results: Sixty eight patients (51% female, mean age 61 ± 19 , FEV1 $57 \pm 20\%$) from 9 different Hospitals were included. Both devices showed no differences concerning preparation time and device cleaning, nor treatment adherence. However, the use of the electronic device significantly decreased nebulization time interlude ($p < 0.005$), and improved patients' tolerability and quality of life (mental subject, $p = 0.032$). Significant differences were shown between treatment compliances reported by the patient and those monitored by the electronic nebulizer ($p < 0.001$).

Conclusions: Electronic nebulizers seem to be better tolerated, save time and improve the patient's quality of life.

P2544

Azithromycin, a novel maintenance therapy in patients with chronic non-CF suppurative lung disease

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Patients with bronchiectasis experience lower respiratory tract infections with decline in quality of life. The British Thoracic Society statement indicates that Macrolides may have disease-modifying activity. A definite recommendation for there use is not made in non-CF bronchiectasis. We present experience of Azithromycin in non-CF bronchiectasis as well as other respiratory diseases at a large district general teaching hospital.

137 patients were identified on maintenance Azithromycin therapy during a 12 month period. 66% received Azithromycin 250mg daily. Azithromycin provided a significant improvement in the mean time between exacerbations/rescue antibiotics, in patients with non-CF bronchiectasis as well as other lung conditions. The mean time to exacerbation was 64 days, without Azithromycin (range 30-360 days) versus 304.5 days, with Azithromycin (range 14-582 days). 48 patients required no rescue antibiotics. Where Azithromycin was electively withdrawn, the patients clinically worsened. This strategy is therefore not recommended. Treatment failure due to side effects only occurred in those patients on a 500mg three times weekly regime. Discussion in the literature raises concerns with atypical mycobacteria, potential for increased colonisation rates and drug resistance. No such concerns were seen in this series. In this series, Azithromycin provided clinical improvement in patients with other non-CF lung disease processes but further studies are needed in this population.

The recommended regime from this study, in those patients with non-CF bronchiectasis is Azithromycin 250mg PO daily.

P2545

Airflow obstruction, functional disability and psychological dysfunction in bronchiectasis

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Introduction: The impact of airflow obstruction, functional disability and psychological dysfunction has previously been described in COPD but not in bronchiectasis. We hypothesised that anxiety and depression may be commoner in bronchiectasis patients with poor functional capacity or evidence of airflow obstruction (AO).

Methods: Adults attending a bronchiectasis clinic from Dec 2010-Jan 2011 were screened. Spirometry was performed & GOLD criteria for COPD were used to categorise AO. Functional ability was assessed using the MRC dyspnoea (MRCD) scale. The Hospital Anxiety and Depression Scale (HADS) was used to screen for anxiety and depression. A score of ≥ 8 in either sub-scale (HADS-A, HADS-D) was deemed clinically significant.

Results: N=52 (34F, 18M). Mean age: 61 (SD 13.4). 30 patients (57.7%) had evidence of AO. 6 patients (20%) had mild AO, 11 patients (37%) had moderate AO, 11 patients (37%) had severe AO and 2 patients (6%) had very severe AO. 27 patients (48%) had a MRCD score of ≥ 3 . 30 patients (42.3%) had a HADS-A score of ≥ 8 . 19 patients (37%) had a HADS-D score of ≥ 8 . 15 patients (28.8%) had both HADS-A and D scores of ≥ 8 . Chi-square analysis showed significant association of clinically significant HADS-A ($p < 0.01$) and HADS-D ($p = 0.013$) scores with a MRCD score of ≥ 3 . There was no significant correlation between FEV₁ (% predicted) and HADS-A ($p = 0.43$) or D ($p = 0.98$) scores.

Discussion: Many patients had severe or very severe airflow obstruction. 50% of

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patients had a MRCD score of ≥ 3 , indicating significant functional impairment. These patients have higher burdens of psychological morbidity. Studies addressing functional impairment and psychological dysfunction are required.

P2546**Staphylococcus aureus sensitivity changes to antibiotics under the influence of dissolved ozone**

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Aim: To study the sensitivity change of the clinical strains of staphylococcus aureus to antibiotics under the influence of dissolved ozone. (pO3).

Methods: We investigated 20 S.aureus strains from sputum culture resistant antibiotics. A suspension was prepared from a day portion of the agar culture of each strain ($1-2 \times 10^8$ /ml), which was treated with dissolved ozone (pO3 3mcg/ml) or with air (control) during 5-10-15 min. Then, the strains treated with pO3 were cultured on Muller-Hinton agar containing strains resistant antibiotics and incubated by 37°C. In a day of incubation we recorded the results of antibiotic resistance change according the diameter zone of the growth inhibition round the antibiotic discs.

Results: The growth inhibition zone increased from 3.8 to 25.7 ± 2.1 mm in all cases of cultured S.aureus strains treated with pO3. And in cases with control strains the growth inhibition zone was not change.

Conclusion: Staphylococcus aureus sensitivity to antibiotics restores after dissolved ozone treatment.

P2547**Identification of four different metallo- β -lactamases, IMP-1, IMP-7, IMP-19 and VIM-2, in Japanese general hospitals**

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Background: Metallo- β -lactamases (MBLs) are bacterial enzymes that hydrolyze carbapems. MBL-producing gram-negative bacilli have been emerging worldwide. In this study, different MBLs were identified in various lung diseases in the Japanese clinical hospitals.

Methods: From Jan. 2009 to Dec. 2010, 1618 GNB strains were submitted to the laboratory of 6 general hospitals in Aichi prefecture. Strains demonstrating a high level ceftazidime resistance (MIC, >128 mg/ml) were subjected to a screening test for MBL production by using disks containing an MBL inhibitor, sodium mercaptoacetic acid (SMA). PCR and sequencing analyses were performed to confirm the types of MBLs and integrases using primers specific for each gene.

Results: Fifty-three strains (34 *Pseudomonas aeruginosa*, 11 *P. putida* and 8 *Acinetobacter baumannii*) were isolated from elderly patients in various wards. These strains were isolated from various respiratory specimens (sputum, pus). By PCR analyses, 35 IMP-1 producers (26 *P. aeruginosa* and 9 *P. putida*), 8 IMP-7 producers (8 *P. aeruginosa*), 4 VIM-2 producers (4 *P. putida*) and 8 IMP-19 producers (8 *A. baumannii*) were found. Three IMP-1 and 2 VIM-2 producers were isolated in the same hospital. All MBL genes identified in this study were mediated by class 1 integron.

Discussion: In this study, four different MBLs were identified in 6 general hospitals. This may owe to excessive use of broad-spectrum β -lactams including cephamycins and carbapenems. Thus, prudent use of antimicrobial agents with broad-spectrum and daily surveillance of multi-drug-resistant strains would be necessary to prevent further transmission of this kind of super microbes.

P2548**Anxiety and depression in patients with bronchiectasis related to bacterial colonization**

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The objective of this study was to assess anxiety and depression by using questionnaires completed by patients with bronchiectasis, who were monitored in a Monographic Clinic.

Patients and methods: We included patients diagnosed with non-cystic fibrosis bronchiectasis, monitored by means of Computed Axial Tomography. The patients were in a stable state and they filled in the Beck depression questionnaire and the state anxiety and trait anxiety Inventory after signing a statement of informed consent.

We collected the following variables: age, sex, and presence or absence of bacterial colonization that was considered by isolating the same type of bacteria in three consecutive sputum separated by a minimum interval of one month. Patients were classified into different degrees of depression and the various percentiles of anxiety. These results were compared to the presence or absence of bacterial colonization.

Results: 45 patients responded voluntarily to the questionnaires, 35 women, with a mean age of 66.46 (14.6) years. 16 were chronically colonized, with 12 cases of *Pseudomonas aeruginosa*. 42.5% of patients (30% mild depression, 12.5% moderate) had depression. 65% of patients had scores above the 50th percentile in both trait anxiety and in anxiety state. State anxiety and trait anxiety were associated with bacterial colonization ($p=0.005$ and $p=0.013$) and more specifically to the colonization by *Pseudomonas aeruginosa* ($p=0.007$ and $p=0.029$).

Conclusions: Patients with bronchiectasis showed a high percentage of anxiety, both state and trait, as well as depression, although most of this is mild. The chronically colonized patients have higher levels of anxiety in these two aspects.

P2549**Microbiological pattern in infective episodes of bronchiectasis**

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Background: Infections usually cause inflammatory reaction and destruction of bronchial wall, this further leads to more disturbance in local defense and a vicious cycle of inflammation and bacterial colonization occurs.

Objectives: The purpose of this paper was to studying the microbiological pattern during infective episodes of Bronchiectasis and possible relation between the invasive Bacteria and lung functions.

Materials and methods: A retrospective analysis of 60 episodes in 50 patients. Forty patients fulfilled our protocol criteria of reliable microbiological result and reproducible lung function tests. The patients were categorized into three stages of severity. Fibroptic bronchoscopy was performed just after spirometry, and BAL sampling was achieved. Cut off point of 10000CFU was considered for positivity of culture media.

Results: H.influenza was the causative agent in 10 episodes (17%), S.pneumoniae in 8 (14%) and Paeruginosa in 9 (14%), Morexella catarrhalis in 7 (12%) episodes. Lung function tests revealed an FEV1 with 50% of predicted value in 20 patients (stage 1), an FEV1 with 35-50% in 12 patients (stage 2) and FEV1 with 35% in 8 patients (stage 3).

There was a correlation between deterioration of lung function and the bacteria isolated from patients with infective exacerbations of Bronchiectasis, in acute episodes *Pseudomonas Aeruginosa* and *Enterobacteriaceae* were the predominant bacteria in patients with FEV1 at 35% of predicted value.

Conclusion: There were no correlations between the isolated bacteria and the duration of symptoms, number of previous hospitalization, or radiological findings. In contrast there was a correlation between the deterioration of lung function and the isolated bacteria.

P2550**The role of viruses and other atypical bacteria in bronchiectasis' exacerbations**

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Introduction: Exacerbations in patients with bronchiectasis, is thought to occur either because of change in the bacterial load of an existing bacteria or because of colonization with a new bacterial strain. Despite the existence of data for the role of viruses and atypical bacteria in patients with COPD, there is paucity of data about their role in bronchiectasis.

Aims and objectives: To study the effect of atypical bacteria and viruses in bronchiectasis exacerbations

Methods: An observational study was performed. For 12 months, 33 patients with bronchiectasis were followed up in 4 months intervals. They were submitted to bronchoscopy in an effort to determine baseline bacteria. Bronchoscopy was also performed during exacerbations. Real time polymerase chain reaction (PCR) was performed in bronchoalveolar lavage (BAL) samples for the detection of *Chlamydia pneumoniae*, *Mycoplasma pneumoniae* and Respiratory syncytial virus (RSV). In addition, antibody titers against Influenza A, Influenza B, Adenovirus, C. pneumoniae and M. pneumoniae were measured.

Results: In total 116 visits were performed (97 baseline and 19 exacerbations). After the first 30 PCR tests, because of cost restrictions, PCR was agreed to be performed only in cases of elevated IgG, seroconversion, or positive IgM titers. Totally 74 PCR tests were performed. RSV was isolated in 4 subjects during baseline periods and none during exacerbations. All PCR tests were negative for atypical bacteria. There was no detection of IgM antibodies against the aforementioned microorganisms.

Conclusions: Despite the small number of recorded exacerbations, atypical bacteria and viruses do not seem to have a role in exacerbations in patients with bronchiectasis.