CHESTCON 2012


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10th Biennial Conference of Pakistan Chest Society

Chestcon 2012

February 23rd – 26th, 2012, Sheraton Hotel, Karachi, Pakistan

About PCS – Pakistan Chest Society

Pakistan Chest Society was established in the year 1983 as the only representative body of chest physicians of Pakistan. It was named as Pakistan Society of Chest Physicians. It was in 1993 that a new constitution was developed and it was decided to change the name to Pakistan Chest Society and to establish its chapters in each province to work at provincial level and center to be rotated every two years followed by a biennial conference. Since 1993 biennial conference is being held regularly as a mega event in different provinces on a rotational basis. It is attended by almost all chest physicians of Pakistan and also by physicians from other countries having interest in the field of pulmonology.

Pakistan Chest Society has been organizing CME’s conferences and educational symposia for doctors as well as working for patient’s and public awareness. It makes guidelines for doctors to treat chest ailments, tailored according to the prevalence and epidemiological needs of the region. It is a forum which works as lobbying group for tobacco control and against other environmental hazards affecting health of people.

The official website of Pakistan Chest Society is http://www.pakchestsociety.org. It helps in spreading information regarding events and also has downloadable updates and interesting cases related to field of pulmonology.

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**Pre-Conference Workshops**
Smoking Cessation
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Radiology In Pulmonary Medicine
Pleural Intervention
Updates In Respiratory Lab Diagnosis
Pulmonary Functions
Ventilation
Sleep Disorder
MDR – TB
Pediatric Asthma
Infection Control
Pulmonary Rehabilitation

**About Karachi**
Located in a vantage position on the coast of Arabian Ocean, Karachi is the largest city of Pakistan both in size and population. With a population of 11.8 million, the city is the 20th most populous city of the world. The city dwellers lovingly refer the metropolis as the City of Lights, City of The Quaid and as the City that Never Sleeps. Karachi is different from the rest of the country much in the same way as New York is different from the rest of the United States. Life is more brisk and fast paced here.
and people seem to be in a hurry.  

Climate: Karachi has a relatively mild climate due to its location near the coast. Winters are mild and summers are hot. July-August is monsoon season the weather is pleasant during December to February. This is the time when most social events take place and visitors from all around the world throng the city.  

Culture: The everyday life in Karachi differs substantially from that of other cities and towns in Pakistan. Karachi’s culture is a fusion of Middle Eastern, Central Asian, South Asian and Western influences. Port Grand Food Street is a new addition to the city’s attractions. It has been built with an investment over Rs1 billion & claimed to be the biggest Food Street. Another new addition is Atrium Cinema, which is the first Digital 3D Cinema in Pakistan. The city boasts of a number of international hotels which provide world class facilities and comfort to visitors. Conference was held at Shereton Hotel Karachi, a place in the heart of city which has witnessed hosting of many medical conferences over the years. Thank you all for attending the event. 

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**SEASONAL TRENDS IN HOSPITAL ADMISSIONS FOR ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS EFFECT ON THE MORTALITY.**  
Nadeem Rizvi[1], Zeeshan Raza[1], Ayesha Ahmed[1], Fatima Ahmed[1], Aiman Ghan[1]  

**Background:** COPD is a chronic disease of the airways with high morbidity and mortality and poor quality of life of patients. [1] According to WHO, it is currently the sixth leading cause of death worldwide[2]; by 2030 it would become the 4th leading cause of death in the world. It is common perception among physicians and patients that the disease is more active during winter causing increase in frequency of hospital admissions due to acute exacerbations.[3,4] However, there is little epidemiological data from Pakistan and little from around the world to support this idea. Therefore, understanding seasonal pattern is important for prognostication and suitable treatment.  

**Objective:** To locate and identify the seasonal pattern in the frequency and outcome of hospital admissions due to acute exacerbations of COPD patients.  

**Methodology:** A retrospective study in which data was retrieved from admissions due to acute exacerbation of COPD in JPMC, AKUH and LNH for the duration of two years (2009-2010).  

**Result:** The study findings were analyzed and are presented in terms of seasonal distribution of disease (figure 2). The results are displayed in table 1. The sample consisted of 1227 patients (Male: n=1014, 82.39%, Female: n=213, 17.36%). Male gender was more frequently involved above the age of 45 years of age. There was an average of 34 admissions per month during the study. After a trough in the months of September and October (Summer), there was a sharp rise in admissions in December (Autumn) which peaked in the months of January and February (Winter) [6]. There was a total of 163 (13.28%) expired cases. We were unable to identify any significant seasonal differences in patients’ demographics which is consistent with Divay Chandra et al. [5]  

**Conclusion:** We found that there was a trend with in the frequency of hospitalizations in the winter months of Karachi [6], starting in December and peaking in January and February of the following year but there was no association between the season of the year and patient characteristics or outcome due to acute COPD.  

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**AWARENESS OF PRIMARY HEALTH CARE AMONG MEDICAL STUDENTS OF ISRA UNIVERSITY, HYDERABAD.**  
Raheel Mehran, Adnan Ali, Sejal Neel, Muhammad Najeeed, Ashok Kuma  

**Objective :** To know the Awareness of Primary Health Care, Among Medical Students of Isra University, Hyderabad.  

**Methodology:** To determine the awareness among male medical students via this research project we chose Cross-sectional study, descriptive study methods. The site of our study was Isra University, Hyderabad. This is a privately owned Institution, whose parent organization is the Isra Islamic Foundation. It is situated in the historical city of Hyderabad. The sample size of our project was 197, which we sorted out through simple random technique. Then we went for the questionnaire form that was easily made in a sound way with internet assistance. Regarding the sample size we got our questionnaire forms filled from 136 students of the 5 educational years of Mbbs, Isra
University Hyderabad; excluding the absentees and not co-operatives. Then we analyzed the data in SPSS V.17 and came to the following results.

**Result:**
- Primary Health Care: 51 of 136 students believe that Primary Health Care is the Essential Health Care.
- Type of Health level: 78% students believe that the type of health level being provided is primary health care.
- Provision of Health Education: Among 136, 64.3% students believe that Health Education is being provided to them.

**Conclusion:**
- By the end of this research project, we came to know that: 31% of first to final year Mbbs students of Isra University, Hyderabad believe that Primary Health Care is basically the Essential Health Care.
- 64.3% students were of the view that the Primary Health Care education was being provided to them.

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**THE ROLE OF LEUKOTRIENE ANTAGONISTS IN ASTHMA THERAPY**

Osman M Yusuf, David Price, Jean Bousquet, Shahida Yusuf, Shahina Rehman Khan, Tanveer Anjum.
The Allergy Asthma Institute Pakistan, Affiliate WHO Collaborating Centre for Asthma & Rhinitis, Islamabad, Pakistan.

**Objective:** To evaluate the latest literature for role of oral Montelukast sodium in the treatment of Asthma.

**Methodology:** Scientific publications in peer reviewed journals regarding the role of Montelukast in the treatment of asthma published during 2010 and 2011 were reviewed to establish the role of Montelukast sodium in the treatment of asthma. Currently followed leading international guidelines dealing with asthma were also reviewed. If they were not reviewed in 2010 or 2011, then the latest version of the guideline currently being followed was reviewed.

**Result:** David Price’s landmark study in the New England Journal suggests that at 2 months of treatment, LTRA (Montelukast) was equivalent to an inhaled glucocorticoid as first-line controller therapy and to LABA as add-on therapy for diverse primary care patients. Other internationally followed guidelines on asthma present an unchallenged place for LTRAs in the treatment of asthma. The GINA Guidelines, perhaps the most respected guidelines for Asthma accepted globally, clearly give a significant place to LTRA as an alternative treatment for patients with mild-persistent asthma. They have a small bronchodilator effect, reduce symptoms, including cough, improve lung function, reduce airway inflammation and reduce asthma exacerbations. The Allergic Rhinitis an its Impact on Asthma (ARIA) Guidelines too, give a place to Montelukast in their Report of 2008, and the Key Questions updated in 2010 (ARIA Revision), as do the International Primary Care Respiratory Group (IPCRG) Statements.

**Conclusion:** Montelukast has a very significant and important role in the control and possibly prevention of asthma, especially in Pakistan where there are significant taboos against inhaler usage, and oral medication remains a treatment of choice.

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**SEVERITY OF NONSMOKER COPD AT PRESENTATION WITH RESPECT TO RISK FACTORS**

Dr. Kumar A, Dr. Ghazal S, Dr. Idrees N, Prof. Rizvi N, Dr. Malik M

**Objective:** To evaluate the severity of nonsmoker COPD at presentation with respect to risk factors

**Methodology.** Non-smoker patients with history of biomass fuel exposure and sign and symptoms of COPD were selected from OPD and evaluated through spirometry and MRC grading of dyspnea with respect to risk factors
Result: out of 96 patients 48 were male and 48 were female. 25% patients presented to us in MRC grade IV (P value 0.013) and the duration of dyspnea was more than five years in 41.7% males and 75% females (P value <0.001). 48% patients with exposure to coal and 50% patients with exposure to dung presented in MRC grade III (P value 0.035). 41.9% Patients having exposure to mosquito coil were in MRC grade II (P value 0.023). Kerosene Oil was a significant cause of severe dyspnea with 60% patients presenting in MRC grade III (P value 0.035) and 20% in MRC grade IV (P value 0.04). spirometry revealed that patients exposed to coal had Mean±SD FEV1 of 1.12±0.38 (P-value 0.01) and those exposed to dung had Mean±SD FEV1of 1.11±0.28 (P-value 0.041). FEV1 of those exposed to mosquito coil and kerosene oil was reduced but values were not statistically significant. On evaluation of risk factors in females it was observed that 83.3% were house wives and exposure to coal, dung and kerosene oil was 66.6% (P value 0.10), 33.3% (P value 0.008) and 19% (P-value 0.017) respectively. Most of house wives were in MRC grade III (38.1%) at presentation.

Conclusion: Majority of patients presented at severe stages of dyspnea with low FEV1 values. Statistically significant association was found between exposure to dung, mosquito coil, kerosene oil and severity of MRC grade. House wives were observed to present at severe stage of disease.

FREQUENCY AND SEVERITY OF COPD IN SMOKERS WORKING AT JINNAH HOSPITAL LAHORE BY USING SPIROMETRY.

Dr Faisal Hassan Zahid, Prof Zafar Hussain Iqbal
Department of Pulmonology, JHL

Introduction: Chronic obstructive pulmonary disease is the major causes of pulmonary disability. This disease is characterized by airway obstruction. COPD is currently the fourth leading cause of death in the world and is expected to become the third leading cause of death by 2020. Smoking, air pollution and other environmental factors facilitate the occurrence of these conditions.

Objectives: To determine the frequency and severity of COPD in smokers working at Jinnah Hospital/AIMC, Lahore by using spirometry.

Study design: Cross-sectional survey.

Setting: Department of Pulmonology, Jinnah Hospital, Lahore.

Subjects and methods: Total 100 cases were included in this study. Patients were labeled as having COPD if FEV1/FVC <0.70. Severity of COPD, the classification cutoffs were mild (FEV1 >80%), moderate (FEV1 80-50%), severe (FEV1 50-30%), very severe (FEV1 <30%), and ratio of FEV1/FVC, < 0.70 in all the cases.

Results: Majority of the patients were between 25-45 years old. Mean age of the patients was observe 39.9±5.4 years. Out of 100 cases, 93 (93.0%) were males while females were 7 (7.0%). Number of pack years 5-30 were most common. COPD was developed in 42 patients (42.0%). Out of these 42, severity of chronic obstructive pulmonary disease (COPD) as follows: mild 20 (47.7%), moderate 14 (33.3%), severe 7 (16.7%) and very severe 1 (2.3%).

Conclusion: The higher prevalence of COPD in smokers clearly showed the effectiveness and a rationale to conduct screening in the smokers.

COMPARISON OF END TIDAL CARBON MONOXIDE (eCO) LEVELS IN SHISHA AND CIGARETTE SMOKERS

Akhter S, Ali U, Rizvi N, Pajwani A.
Jinnah post graduate and medical centre. Chest ward.

Background and Objective: 100 million people around the world smoke water pipe, also traditionally known as hukka or shisha. Its use is more prevalent among Arabs and Middle East and research has shown that around 60 % people start smoking shisha at age of 16 to 18 during their college life. Shisha is also getting endemic in our part of world. Measuring eCO concentration is easy and non invasive method that correlates intensity of tobacco smoke inhalation and different kinds of smoking techniques. Carbon monoxide leads to tissue hypoxia by producing carboxyhemoglobin as it has high affinity for hemoglobin.

The aim of this study was to evaluate and compare the increase in end tidal carbon monoxide (eCO) levels in exhaled breath of healthy smokers after cigarette and shisha smoking. eCO levels were also analyzed in passive
smokers.

Methodology: A cross sectional study was conducted and eCO levels were measured in 70 subjects (22 healthy cigarette smokers, 20 healthy shisha smoker, 26 passive smokers) by portable device. They smoke either shisha for 30 minutes in shisha bar or smoke 5 cigarettes in 30 minutes in simple restaurant. We also recruited group of non smoking people who were exposed to tobacco smoke in those places for 1 hour eCO level s were measured in all groups at base line and at different intervals (5mins,30 mins and 60 mins) by doctor’s team.

Result: The mean age of study group was 23.22 +/-1.91 years. One way ANOVA and paired t test were run through SPSS to analyze the data. The baseline mean eCO in healthy smokers was 3.50 +/- 0.65 ppm, passive cigarette smoker 3.71 +/-1.06 ppm, shisha smokers’ 27.70 +/-4.92 ppm and passive shisha smokers 18.33 +/-8.41 ppm and this difference was due to close environment and poor ventilation of shisha restaurants. The increase in eCO from baseline after 60 min in healthy smoker was 9.41 +/-4.67 (p=0.000) in passive cigarette smoker 3.57 +/-2.53(p=0.00), healthy shisha smoker 57.90 +/-27.43 (p =0.000) and passive shisha smokers  13.33 +/-4.69(p=0.03).

Conclusion: On basis of eCO levels one session of shisha smoking is around 6 times more toxic than cigarette smoking and sitting in shisha bar itself cause significant increase in eCO levels.

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EFFECTIVENESS OF BILEVEL POSITIVE AIRWAY PRESSURE (BiPAP) IN TYPE II RESPIRATORY FAILURE DUE TO POST TUBERCULOSIS SEQUELAE
Dr Saima Siraj, Dr Nadeem Rizwi

Objective: To determine the effectiveness of Bilevel Positive Airway Pressure (BiPAP) in patients presenting with type II respiratory failure due to Post tuberculosis sequelae.

Methodology: Descriptive case series study conducted in department of chest medicine JPMC between jan-july 2011. 71 patients (40 males and 31 female) of post tuberculosis sequelae presenting with type II respiratory failure were given Bipap and effectiveness measured in terms of avoidance of endotracheal intubation, GCS15/15, and normal respiratory rate after 24 hours of application of Bipap.

Result: Post treatment GCS 15/15, Ph > 7.35, PaCO2 between 55-65, and respiratory rate 14-20 was achieved in 47 (66%) patients while 24 (33.8%) patients did not show desired improvement. Out of 71 patients, 19 (26.7%) expired, 5 (7%) needed ETT intubation, while 47 (66%) had improvement with BiPAP. Efficacy of BIPAP was thus revealed 66% while it was not found effective for 33.8% patients.

Conclusion: The success rate of Bilevel Positive Airway Pressure (BiPAP) was 66% in type II respiratory failure patients due to post tuberculosis sequelae. We recommend this modality of treatment should be used as success is much higher than failure rate.

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THE COMPARISON OF FREQUENCY OF UNDIAGNOSED CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN CURRENT OR FORMER TOBACCO SMOKERS HAVING ISCHEMIC HEART DISEASE.
Dr. Talha Mahmud
Assistant Professor and Consultant Pulmonologist, Shaikh Zayed Hospital and Federal Postgraduate Medical Institute, Lahore, Pakistan.

Objective: This study compares the frequency of undiagnosed COPD in tobacco smokers suffering from IHD and analyzes the association of COPD severity with status, type and duration of smoking.

Methodology: It was an analytical cross sectional study conducted in current and former exclusive cigarettes, exclusive hookah and combined cigarette and hookah smokers having proven ischemic heart disease (IHD) to diagnose the obscure COPD by performing spirometry.

Result: Among 124 males having proven IHD, majority 74 (59.7%) being former smokers were having ages between 42 to 78 years. All had dyspnea up to MRC grade 4 and 64 (51.6%) reported chronic cough and sputum production. Tobacco smoking types included 64 (51.6%) exclusive cigarette, 30 (24.2%) exclusive hookah (water
pipe) and 30 (24.2%) smoking both hookah and cigarettes. Forty seven (37.90%) were found to have obscure COPD with its frequency among different types showed 24 cases (37.5%) of cigarette smokers were COPD positive, 12 (40%) hookah and 11 (36.7%) were from combined cigarette and hookah smokers. It was analyzed among the three groups of tobacco smokers that smoking duration, type and status had no association with the severity of COPD.

Conclusion: The frequency of undetected and thus untreated COPD is high in current or former tobacco smokers suffering from established ischemic heart disease. The hookah and combined hookah and cigarette smokers are almost as prone to develop COPD as exclusive cigarette smokers in contradistinction to the myths regarding water filtration of chemicals during hookah smoking.

SIX-MINUTE WALK TEST PERFORMANCE IN HEALTHY ADULT PAKISTANI VOLUNTEERS
Dr. Nisar Ahmed Rao, Muhammad Irfan, Ahmed Saleman Haque, Ali Bin Sarwar Zabairi, Safia Awan, Farhana Mumtaz*
Department of Pulmonology, Ojha Institute of Chest Diseases, University Road, Karachi

Objectives: Six-min walk test (6MWT) is useful in assessing functional exercise capacity. Previous authors have published predictive equations for 6MWT distance (6MWD) among diverse populations groups with varying results. We aimed to determine the 6MWD for healthy Pakistanis, identify factors affecting 6MWD, compare published equations with the local data and derive an equation.

Design: Subjects between 15 and 65yrs were prospectively enrolled after screening. A standardized 6MWT was administered. SpO2, HR, BP and dysopnea scores were determined pre and post-test.

Results: 211 (71%) men and 85 (29%) women participated. Mean±SD 6MWD was 469.88 ±101.24m: men (mean±SD) walked 502.35 ± 92.21m and women 389.28 ± 74.29m. On univariate analysis gender, height, weight and age showed a significant relationship with the 6MWD. Gender and age were identified as independent factors in multiple regression analysis, and together explained 33% of the variance.

The sex-specific prediction equations are:

6MWD (m) for men = 164.08 + (78.06*1) - (1.90*age in yrs) + (1.95*height in cms)
6MWD (m) for women = 164.08 - (1.90*age in years) + (1.95*height in cms)

Conclusions: 6MWDs among Pakistanis are shorter than predicted by reference equations in literature. Height, gender and weight combined explained 33% of the variance. Comparison with published equations revealed a moderate overestimation of the 6MWD in our population. The proposed equation gives predicted (mean) 6MWDs for adult Pakistani naïve to the test when employing standardized protocol. Prospective validation of this equation in future larger community based studies is warranted.

DIAGNOSTIC ROLE OF PLEURAL BIOPSY IN EXUDATIVE PLEURAL EFFUSION.
Dr Balchand Motiani*, Nadeem Rizvi*, Fakhir Raza Haidri*

Background: Exudative pleural effusion poses a diagnostic challenge, main differentiation being TB and malignancy. The role of needle biopsy varies in different patient groups and is likely to be of greater benefit in countries with high TB prevalence.

Objective: To evaluate diagnostic yield of Abraham pleural biopsy in cases with exudative pleural effusion.

Methodology: A descriptive study was conducted in Jinnah Hospital Karachi, department of chest medicine from September 2007 to March 2009. Seventy nine patients of age> 12 years diagnosed with exudative pleural effusion were consecutively enrolled. Pleural biopsy was performed by Abrams biopsy needle. The main outcome of the study was to evaluate diagnostic yield of Abraham needle biopsy.

Results: The mean age of the sample was 47.55±18.56 years. There were 49 (62%) males and 30 (39%) were females. The results found that pleural biopsy was diagnostic in 50 (63.29%). Out of 50 patients, 21 (42%) patients had tuberculosis and 18 (36%) malignancy. Chronic non specific inflammation was present in 6 (12%) of patients and empyema in 5 (10%) patients.
Ward 12, Department of Chest Medicine, Jinnah Post Graduate Medical Center, Karachi

Conclusion: Abraham needle biopsy is useful in confirming the diagnosis of TB and malignancy in patients with exudative pleural effusion.

Key Words: Pleural Effusion, Abraham Pleural Biopsy, Empyema, Tuberculosis.

FREQUENCY AND MANAGEMENT OUTCOME OF PNEUMOTHORAX PATIENTS
Nisar Khan, Huma Jadoon, Munawar Zaman, Aqeel Subhani, Abdurrab Khan, Mian Ihsanullah.

Objective: to know the frequency of pneumothorax and outcomes after management in patients admitted in pulmonology department, Ayub teaching hospital, Abbottabad.

Methodology: pneumothorax patient presenting at pulmonology unit, Ayub teaching hospital from 2002 to December 2008 were included in the study. Patients of all ages were included in the study. Patients were admitted and observed till full recovery.

Result: A total of 195 pneumothorax patients reported during this period. Majority of patients were diagnosed to have pneumothorax due to pulmonary tuberculosis making about 36.92% of the all cases. Second most important cause was primary spontaneous pneumothorax 21.53%. COPD was also sizeable at 8.71 %. Other causes included bacterial infections, Asthma, Iatrogenic, interstitial lung disease, bronchiectasis and Trauma.

Conclusion: it was concluded from this study that Tuberculosis is the commonest cause of pneumothorax in our setup.

YIELD OF ABRAMS NEEDLE PLEURAL BIOPSY IN EXUDATIVE PLEURAL EFFUSION.
Ihsanullah, Nisar Khan, Huma Jadoon, Munawar Zaman, Ashfaq Ahmed.

Objective: to know the yield of pleural biopsy through Abrams needle in exudative pleural effusion with histopathology as gold standard.

Methodology: This prospective study was conducted in the department of pulmonology at Ayub teaching hospital Abbottabad over a period of one year from January 2008 to December 2008. Sixty three patients of either sex and all ages with exudative pleural effusion, on each Abrams needle biopsy was performed were included in the study. Minimum of four specimens were taken from each patient and histopathology done.

Result: Out of 63 patients, histopathology revealed the cause in 60(95%) cases. Tuberculosis, malignancy and rheumatoid pleurisy was confirmed in 34, 24, and 2 cases respectively. Specimens of 3 patient did not reveal any result and showed non specific inflammation and were further investigated accordingly.

Conclusion: the diagnostic yield of biopsy was 95%. Pleural biopsy is still a reliable and valuable investigation in diagnosis of pleural effusion, provided that adequate pleural specimen is taken.

WHERE THERE WAS NO DOCTOR: SOCIAL CULTURAL DIVERSITY REGARDING MANAGEMENT OF PNEUMONIA.
Dr: Jewat Sunder**, Dr: Satti Jewat*
Sindh United(n)Developmental Educational Society

Objective: To determine the cases of different cigarettes mark of patient who (They were in problems of respiratory disease in lethal situations in their life) at that time where doctor was not there ,to analysis, how, why, what, where, when they do the citrates mark as management of lethal (chronic asthma, pneumonia) and save the lives of their children.

Methodology: Descriptive study (Situation analytical study spss 11 version)
Result: There were 42 cases analyses (all those cases in which the mark was given).

The results were Males: 14(33.33%) Females: 7(16.6%) 
Boys: 13(30.95%) Girls: 8(19%).12(28.57%) were mild complain of the respiratory symptoms. 5(11.90%) were on the ATT in their life, 25 (59.52%) were no any major complain except seasonal.21 (50%) were smoker yet, 2(4.76%) were chewing niswar.5 (11.90%) were supari.

Conclusion: Though the 21st century is going on such kind of the approachable way of management to save the lives of their children may have medical ethical issue but the realization is that like at end stage of cardiac management we use the electric shock for saving the life. Such kind of management was carried out as home remedy to save the lives, still there is more need work especially in rural (desert) areas.

**Risk Factors to Predict Mortality in Patients with Lung Abscess**

_Ghazal S, Idrees N, Kumar A, Rizvi N, Saifullah N_

_Chest Medicine Department. Jinnah Postgraduate Medical Centre. Karachi_

**Objective:** To identify the factors associated with increased mortality in patients with lung abscess.

**Methodology:** Lung abscess cases were evaluated retrospectively from hospital record from January 2009 to January 2011. 41 patients with diagnosis of lung abscess were admitted during this duration.

**Result:** Out of 41 patients 30 were Male and 11 were females. mortality was found to be higher in males(13 out of 30 i.e.76.5%) as compared to females (4 out of 11 i.e.23.5%). patients 41 to 60 years of age, comprising 51.2% of the study population also had high mortality(9/21 i.e. 52.9%); those having history of diabetes, smoking and alcohol intake had mortality rates i.e.58.8%,70.6% and 17.6% respectively. 16 patients had blood sugar levels >200 out of which 9 expired in hospital (52.9%). Among expired patients 29.4% had sputum culture positive for pseudomonas aeruginosa. Only statistically significant association was found between Hb level at the time of admission and patient outcome. patients with HB level between 7 to 10 at the time of admission had high mortality rate (13/21 i.e. 76.5% p- value 0.013) while those having Hb level more than 10 were found to have good survival rates (13/15 i.e. 54.2% p- value 0.005.)

**Conclusion:** Among risk factors male gender, older age, history of diabetes, smoking and alcohol intake had high mortality rates. High blood sugar level at admission and pseudomonas aeruginosa on sputum culture were found to be important predictors of mortality in patients diagnosed as having lung abscess. Only statistically significant factor was found to be Hb level at admission with patients having low values having greater mortality.

**To Study the Causative Organism for CAP (Community Acquired Pneumonia) and Their Drug Sensitivity.**

_Z. Ahmed, A. Arsalan, S. Baloch, A. Abbas, M. Saleem_

**Objective:** To see the organism causing CAP and their drug sensitivity.

**Methodology:** This was an observational study carried out in the department of pulmonology LNH Karachi in the month of May 2010 to April 2011. Clinical records were reviewed for risk factors, co-morbidities and immunization status along with laboratory reports of blood sputum and culture test. History of prior pneumococcal vaccination was also obtained. All patients who were admitted with a diagnosis of CAP in Chest ward, HDU and ICU were included in the study. 
111 patients were included in our study.

**Result:** Out of 111 patients 66 were males and 45 were Age range 28 to 78 years. (Mean 52 yrs.). 30 patients were hypertensive. 10 out of them were suffering from chronic obstructive pulmonary disease, five hypertensive patients also had asthma, and five had diabetes as well. Two patients had asthma and ischemic heart disease. One was hepatitis C positive with asthma. Seven patients were treated for T.B in past, one of whom had asthma, and three had COPD as well. Two patients had COPD and D.M.
Out of these 111 patients, 9 patients died. The CRUB-65 scores were 5 in 2 patients, 4 in 4 patients and 3 in 3 patients. Out of 111 patients, 12 patients were smokers. All of whom were males. Their sputum culture results were positive in forty patients.

Conclusion: Our results show that like other studies done in past Strep pneumonia is still the commonest organism to cause CAP. Despite wide spread and uncontrolled use of antibiotics in community most of the cases with strep pneumonia are still sensitive to amoxicillin.

OUTCOME OF THYMECTOMY FOR MYASTHENIA GRAVIS—PESHAWAR EXPERIENCE OF 47 CASES
M. Imran, A. Baseer, M. Kaleemullah, A. Bilal

Objective: To assess the safety and efficacy of Thymectomy for myasthenia gravis.

Methodology: Computerized clinical data of 47 diagnosed cases of myasthenia gravis that underwent thymectomy was retrospectively analyzed. The study was conducted at Departments of Cardiothoracic Surgery Lady Reading Hospital Peshawar from January 2002 to March 2011. All patients who had persistent generalized or ocular myasthenia gravis, referred to our department by neurologists and general physicians, partially or not responding to medical treatment with or without thymoma were included in the study. Patients who were unfit for surgery were excluded from the study. CT scan was done in all patients apart from routine investigations. Preoperative medication included anticholinesterase drug. Plasmapheresis was done in all cases pre and postoperatively. They all underwent Thymectomy via median sternotomy. Follow up was done in all cases.

Result: Out of 47 patients, 17 were males and 30 were females with a mean age of 32.8 years (range 18-50 years) were analyzed. The preoperative duration of the disease ranged from 0.3 to 124 months (mean=25.72 +/- 30.68 months). According to the Myasthenia Gravis Foundation of America (MGFA) clinical classification, 32 (68%) patients were in stage II while 15 (32%) patients were in stage III. The histology of thymus glands consisted of hyperplasia in 18 (38.2%) patients, normal in 14 (29.78%), atrophic thymus in 5 (10.6%) and thymoma in 10 (21.2%) patients. Hospital mortality was 6.3% (n=3/47) while morbidity was 8.5% (n=4/47). The mean follow up period was 31.5 months (3-63 months). Complete remission was achieved in 68% (n=32/47) patients, and marked improvement in 21.2% (n=10/47), for a total benefit rate of 80%. Five (10.6%) patients remained unchanged and had no clinical improvement.

Conclusion: Thymectomy is a safe and effective treatment for patients with myasthenia gravis along with plasmapheresis.

UNDERSTANDING USER ENGAGEMENT AND EXPERIENCE WITH ZINDAGI SMS, AN INTERACTIVE SMS REMINDER SYSTEM FOR PATIENTS WITH TUBERCULOSIS
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Interactive Research and Development, 508, Ibrahim Trade Towers, Sharah-e-Faisal, Karachi

Objective: The treatment for tuberculosis is long with uncomfortable side effects. Thus, some patients fail to complete their full course of treatment, which has led to the increasing global problem of drug-resistant tuberculosis. We are conducting a randomized control trial with 2200 patients in Karachi, Pakistan to gauge the impact of Zindagi SMS on drug compliance and treatment outcomes of patients with drug susceptible tuberculosis.

Methodology: Zindagi SMS is an interactive SMS reminder system that sends daily reminders and asks the patient to respond back after taking their medication. Patients who do not respond are sent a maximum of three reminders a day. Those that are non-responsive for seven days are followed up with over the phone. We are enrolling patients with drug-susceptible TB who have access to a mobile phone and are randomizing them, using a mobile phone-based application, to either receive SMS reminders through the Zindagi SMS system or to a control arm.

Result: The trial began in March 2011 and, to date, we have enrolled a total of 153 patients, 86 (56%) of which have been randomized to the Zindagi SMS group and 67 (44%) to the control group. Patients are followed up on a monthly basis at their homes to conduct surprise tests using urinalysis strips to gauge whether they have taken their
medication that day. Moreover, during their treatment, sputum smear microscopies are conducted on patients’ sputum in order to measure treatment outcomes between treatment and control group. We hope to share preliminary data on user engagement with the Interactive Reminders system, including response rates and patterns.

**LEVEL OF ASTHMA CONTROL AT SOUTH PUNJAB**

Javed Iqbal, Asim Umar, Munir Azhar, Ahtesham Iqbal, Muhammad Abid Hassan, Sami Ahmad, Sajida Naseem.

Quaid E Azam Medical College Bahawalpur Pakistan.

**Objective:** To assess the level of asthma control in South Punjab region.

**Methodology:** Five question Asthma Control Test Questionnaire was used and results were based on the answers of those questions by patients. And it was analyzed on SPSS software.

**Result:** Total 768 patients participated in the study. Among them 50% were young and 12.5% were elderly. Fifty four percent of patients were from rural area and 54% were educated. Seventy one percent were females and 29% were males. Seventy five percents had poorly controlled asthma and 12.5% had controlled asthma while 12.5% had partly controlled asthma. In poorly controlled group 50% were young and controlled group young age patients were 67%. None of elderly had fully controlled asthma. Seventy two percent of females have poorly controlled asthma while 28% males have poor control of asthma. Fifty percent of poorly controlled group patients were educated. In fully controlled group 100% patients were educated.

**Conclusion:** Asthma control is poor in south Punjab region of Pakistan. Education level has a remarkable effect on the control of asthma.

**OUTCOME OF MUSCLE SPARING MID AXILLARY VERTICAL THORACOTOMY IN THORACIC SURGERY UNIT PESHAWAR, AN EXPERIENCE OF 100 CASES**

Muhammad Imran, Amer Bilal, A. Baseer, Muhammad Abid

**Objective:** To determine the outcome of muscle sparing vertical axillary thoracotomy.

**Methodology:** Retrospective analysis was done in 100 cases of different chest pathologies in which Vertical Mid Axillary Muscle Sparing Thoracotomy was carried out at the Thoracic Surgery Unit, Lady Reading Hospital Peshawar. Patients with all ages, both sexes and consenting to the procedure with diagnosis of Hydatid Lung disease, Bullous Lung diseases, Clotted Hemothorax, Foreign Body, Early Empyema, Recurrent pneumothorax, Solitary Pulmonary Nodule, Bronchiectasis and Diagnostic biopsy were included in this study. Patients with Fibro thorax, malignancies, Chronic Empyema, Indication for Emergency Thoracotomy and previous history of Thoracotomy were excluded from this study. Visual analogue scaling for pain was done in patients during stay at hospital where as evaluation of range of motion and cosmetic satisfaction done at one week follow-up.

**Result:** Out of 100 cases Evacuation of Clotted Hemothorax was done in 22 (22%), lobectomies 12 (12%), Decortications 17(17%), Hydatid Cystectomy 13(13%), removal of Foreign Body 5 (5%), Pleurectomy 10(10%), Bullectomy 5(5%), Wedge resection 10 (10%), Pneumonectomy was 1 (1%) and Open Pleural Biopsy was done in 5 case (5%) each. Mean duration of surgery was less than 45 minutes and length of hospital stay was 3 days. Morbidity was 3% including wound infection 2 cases and Post-Op Pneumothorax in 1 case. There was no mortality. According to visual analogue scale for pain 76% of patients were in 2-3 Visual Analog Scale on day 1, 80% on day 2 and 90% on day 3 before discharge. At one week follow up most of the patients (70%) showed good range of motion and 75% patients satisfied with good cosmesis.

**Conclusion:** Vertical Axillary Muscle Sparing Thoracotomy incision provides acceptable access to the chest cavity for most Thoracic procedures, lesser operative time, decrease length of hospital stay, reduces post-operative pain, ensure good shoulder mobility and good cosmesis.
ONE YEAR AUDIT OF THE DEPARTMENT OF THORACIC SURGERY LADY READING HOSPITAL PESHAWAR FOR THE YEAR 2011
Aamir Bilal, M. Abid, S.Z. A. Shah

Objective: To Audit one year workload of department of Thoracic Surgery LRH & to determine Mortality & Morbidity.

Methodology: Computerized data comprising of patient demographics, disease, surgical procedure performed, number of complications and deaths was analyzed to determine the outcome, morbidity & mortality.

Result: Total procedures were 1469. Tube Thoracostomies were 610 and elective procedures were 1071. Elective Thoracic procedures were 1046 (97.66%) while cardiac procedures were 25 (2.33%). Among the elective Thoracic procedures Oesophageal procedures were 239 (22.31%) including Esophagectomies 149 (13.91%), diagnostic or palliative Oesophagoscopies 29 (2.7%), Hellers Myotomy 14 (1.3%), and palliative Feeding Jejunostomies in 37 (3.45%), oesophageal perforation repair 4 (0.37%) and other procedures 8 (0.74%). Mediastinal procedures were 89 (8.30%) including Mediastinotomies in 49 (4.57%) Mediastinal Mass Excision in 18 (1.68%), Retrosternal Goitre Excision in 10 (0.93%) patients, thymectomy 10 (0.93%). Pleural procedures were 359 (33.5%) including Decortications 269 (5.11%), open pleural Biopsy in 54 (5.04%) patients, evacuation of clotted hemothorax 20 (1.86%). Pulmonary procedures were 196 (15.7%) including Pneumonectomies in 19 (1.77%), Lobectomies in 53 (4.94%) Bullectomies 3 (0.28%), Hydatid Cystectomies in 30 (2.80%), Open Lung biopsy in 23 (2.14%), Wedge Resection in 8 (0.74%) Exploratory/Emergency Thoracotomies in 20 (1.86%). Lung abscess 9 (0.84%), lung bagging 27 (2.52%). Chest wall procedures were in 118 (11.0%) patients including Tumour Excision in 7 (0.65%), Thoracoplasty in 66 (6.16%), Foreign Body in 14 (1.3%), Close Cardiac cases were done in 25 (2.33%) including pericardial intubations in 13 (1.21%), PDA Ligation in 10 (0.93%) pericardectomy in 2 (0.18%). Overall morbidity was 33 (3.0%). In majority of them wound infection was the main Morbidity especially infection of the previous Drain site. Over all mortality was 27 (2.52%).

Conclusion: Highest priority should be given to surgical audit to determine various factors contributing to morbidity and mortality, and ultimately improve the patient care. Accountability of the work done by the unit to improve patient care should be routine of each medical professional.

INNOVATION OF AN ORTHODOX SURGICAL PROCEDURE FOR NON-RESOLVING PULMONARY TUBERCULOUS CAVITIES IN HIGH RISK PATIENTS
Lt Col Dr Asif Asghar
Thoracic Surgeon Combined Military Hospital, Shaami Road, Lahore Cantt.

Objective: To determine the efficacy of tailored thoracoplasty for relief of fever and sputum production in pulmonary high risk patients with post tuberculosis cysts of lung.

Methodology: The study was conducted at Combined Military Hospital Lahore.21 cases were enrolled in the study. Patients of all ages and sex with non resolving thick walled post tuberculous lung cysts who were declared high risk for lung resectional surgery were selected. This group included cases with deranged lung function tests (FVC and FEV1 less than 40 % of predicted. Patients were evaluated for quantitative decrease in sputum and relief of fever after surgery.

Thick walled cavities (wall thickness greater than 3 mm on CT scanning) usually do not resolve with conservative medical treatment. We think that by complete removal of three or four ribs which are overlying thick-walled cavities, the remaining intercostal soft tissues fall over them leading to collapse and healing.

Procedure: All cases were operated using thoracic epidural block at T 4 or T 5 level. General anaesthesia was not administered. Four complete ribs were removed. Most of the patients were discharged on 4th post operative day. Patients were assessed on 7th 14th and 30th day as outpatients for quantitative decrease in sputum and relief of fever.
Result: We operated upon 21 patients. 8 patients were sputum positive. 19/21 patients had relief of sputum and 18/21 patients had relief of fever. Complications were few. Hypotension requiring ionotropic support was required during surgery in 7 cases and on 1st post operative day in 3 cases. One patient developed lobar pneumonia on operated side. 3 patients had intercostal neuralgia, 1 patient had frozen shoulder and two with minor wound infection. There was no death.

Conclusion: Limited thoracoplasty using epidural analgesia in a patients with low pulmonary reserve is a safer alternative to resectional surgery for nonresolving symptomatic tuberculous lung cavities.

Frequency and Severity of COPD in smokers working at Jinnah Hospital Lahore by using Spirometry.

Dr Faisal Hassan Zahid, Prof Zafar Hussain Iqbal
Department of Pulmonology, JHL

Introduction: Chronic obstructive pulmonary disease is the major causes of pulmonary disability. This disease is characterized by airway obstruction. COPD is currently the fourth leading cause of death in the world and is expected to become the third leading cause of death by 2020. Smoking, air pollution and other environmental factors facilitate the occurrence of these conditions.

Objectives: To determine the frequency and severity of COPD in smokers working at Jinnah Hospital/AIMC, Lahore by using spirometry.

Study design: Cross-sectional survey

Setting: Department of Pulmonology, Jinnah Hospital, Lahore.

Subjects and methods: Total 100 cases were included in this study. Patients were labeled as having COPD if FEV₁/FVC <0.70. Severity of COPD, the classification cutoffs were mild (FEV₁ >80%), moderate (FEV₁ 80-50%), severe (FEV₁ 50-30%), very severe (FEV₁<30%), and ratio of FEV₁/FVC, < 0.70 in all the cases.

Results: Majority of the patients were between 25-45 years old. Mean age of the patients was observe 39.9±5.4 years. Out of 100 cases, 93 (93.0%) were males while females were 7 (7.0%). Number of pack years 5-30 were most common. COPD was developed in 42 patients (42.0%). Out of these 42, severity of chronic obstructive pulmonary disease (COPD) as follows: mild 20 (47.7%), moderate 14 (33.3%), severe 7 (16.7%) and very severe 1 (2.3%).

Conclusion: The higher prevalence of COPD in smokers clearly showed the effectiveness and a rationale to conduct screening in the smokers.

THE HISTORY OF TUBERCULOSIS

Prof. Zafar Hussain Iqbal, Dr Aneela Chaudhary
Department of Pulmonology, JHL

Tuberculosis has co-evolved with humans for many thousands of years, and for most of our history it has been a violent and undefeatable killer. Known as consumption, phthisis, and White Plague, tuberculosis dates back to prehistory and remains endemic in most of the world. Skeletal remains of prehistoric humans (7000 BC) were found to have TB, and has been found in the spines of mummies from 3000–2400 BC.

Till Middle Ages, no significant advances were made regarding tuberculosis. Avicenna and Rhazes continued to consider to believe the disease was both contagious and difficult to treat. A diagnosis of tuberculosis was, in effect, a sentence to a painful death, comparable to that of AIDS in our more recent history.

"Mycobacterium tuberculosis", was identified in 1882 by Robert Koch. Public Health measures to combat the spread of tuberculosis emerged following the discovery of its bacterial cause. BCG was developed in 1906. Development of the antibiotic, streptomycin in 1946 was considered the beginning of the modern era of tuberculosis. Prior to the introduction of this drug, the only treatment options were sanatoria and surgical interventions, including the pneumothorax or plombage technique. The advent of Isoniazid, Rifampicin and other agents hastened recovery times, and significantly reduced the number of tuberculosis cases until the 1980s.
Hopes to eliminate TB faded in the 1980s when drug-resistant strains emerged. In 1993, global health emergency was declared by WHO. In 20th century, despite better understanding of disease and advancement in diagnostic facilities, we still feel helpless to combat this killer. Now are we facing new challenges like MDR and XDR.

**RISK FACTORS TO PREDICT MORTALITY IN PATIENTS WITH LUNG ABSCESS**

*Dr. Ghazal S, Dr. Idris N, Dr. Kumar A, Prof. Rizvi N, Dr. Saifullah N*

*Chest Medicine Department, Jinnah Postgraduate Medical Centre, Karachi*

**Objective:** To identify the factors associated with increased mortality in patients with lung abscess.

**Methodology:** Lung abscess cases were evaluated retrospectively from hospital record from January 2009 to January 2011. 41 patients with diagnosis of lung abscess were admitted during this duration.

**Result:** Out of 41 patients, 30 were male and 11 were females. Mortality was found to be higher in males (13 out of 30 i.e. 76.5%) as compared to females (4 out of 11 i.e. 23.5%). Patients 41 to 60 years of age, comprising 51.2% of the study population also had high mortality (9/21 i.e. 52.9%). Those having history of diabetes, smoking and alcohol intake had mortality rates i.e. 58.8%, 70.6% and 17.6% respectively. 16 patients had blood sugar levels >200 out of which 9 expired in hospital (52.9%). Among expired patients, 29.4% had sputum culture positive for pseudomonas aeruginosa. Only statistically significant association was found between Hb level at the time of admission and patient outcome. Patients with Hb level between 7 to 10 at the time of admission had high mortality rate (9/21 i.e. 42.9% p-value 0.013) while those having Hb level more than 10 were found to have good survival rates (13/15 i.e. 54.2% p-value 0.005).

**Conclusion:** Among risk factors, male gender, older age, history of diabetes, smoking and alcohol intake had high mortality rates. High blood sugar level at admission and pseudomonas aeruginosa on sputum culture were found to be important predictors of mortality in patients diagnosed as having lung abscess. Only statistically significant factor was found to be Hb level at admission with patients having low values having greater mortality.

**A STUDY OF 24 PATIENTS FOR OUTCOME OF RESECTION OF GIANT BULLAE.**

*Saima Sultan, Khalid Ali, Ghulam Shabbir, Deptt of Thoracic Surgery, Gulab Devi Chest Hospital Lahore,*

**Objective:** To assess the benefits and complications that can be encountered with resection of giant bullae.

**Methodology:** 24 patients underwent resection of giant bullae at GULAB DEVI HOSPITAL LHR from Oct 2010 to Oct 2011. Out of those 20 were of unilateral bullae and 4 were with bilateral emphysematous bullae. All had moderate to severe dyspnoea, recurrent chest infections and hyperinflated giant bullae compressing adjacent lung parenchyma on chest x-ray. 12 patients were oxygen dependent and rest of them required supplementary oxygen intermittently. Spirometry was done that showed mild to moderate restriction and obstruction in 8 patients and moderate to severe restriction and obstruction in the rest. All patients underwent pulmonary rehabilitation preoperatively but symptoms did not improve. All patients with unilateral bullae and 2 patients of bilateral bullae were operated for resection.

**Results:** After resections all patients were compared for symptoms including dyspnoea, oxygen dependency, spirometry and radiologically. Out of 22 operated cases (90%) patients were comfortable both at rest and during their normal activities and maintained their oxygen saturation at room temperature on 1st post-operative day. 02 (90%) patients were complicated with exertional dyspnoea and were given supplementary oxygen for 3-5 days. Forced Expiratory volume increased from 34% to 60% in unilaterally operated patients and from 30% to 50% in bilaterally operated patients. Residual volume decreases progressively from 262% to 154%. Complications included prolonged air leak of more than 7 days in 2 patients, post-operative mechanical ventilation in 1 patient and pneumonia in 3 patients. 1 (4%) patient was expired on 3rd post-operative day and was later diagnosed as a case of malignancy along with bullae on histopathology report.

**Conclusion:** It is concluded that resection of giant bullae can produce significant immediate functional improvement with little morbidity/mortality.
COMPARISON OF TALC POUDRAGE WITH TERTACYCLINE PLEURODESIS IN MALIGNANT PLEURAL EFFUSION.
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Objective: Breathlessness caused by malignant pleural effusion is mainly due to mechanical compression of lungs and mediastinum. Tube thoracostomy with chemical pleurodesis has become the most common therapeutic approach to provide symptomatic relief. Tetracycline pleurodesis has been a common practice. With the recent availability of Talc in our institution, we conducted a study to see whether there is a difference in outcome of pleurodesis for malignant pleural effusion done by Talc poudrage as compared to Tetracycline in order to develop local experience.

Methodology: 46 patients presenting with malignant pleural effusion were selected and randomly divided into two equal groups on alternate basis for the choice of agent for pleurodesis. Group-A was given 1 to 1.5 G of Tetracycline instilled through a small bore pleural catheter. Group-B was given 4 gram of medical grade Talc, poudraged through a rigid pleuroscope (Storz), performed under local anesthesia and mild sedation. Radiological response was assessed in both the groups at 4 weeks of interval.

Result: Success and failure among Talc poudrage group was 87% and 13% respectively as compared to Tetracycline group 65.2% and 34.8% respectively. The difference was statistically significant. There was no mortality in either group with in the study period.

Conclusion: This study showed the superiority of Talc pleurodesis through poudrage over tetracycline pleurodesis. Our results are comparable to other published data. This has helped to change our institutional practice for pleurodesis.

ONE YEAR EXPERIENCE OF STANDARD CERVICAL MEDIASTINOSCOPY AND BIOPSY FOR MEDIASTINAL LYMPHADENOPATHY
Dr. Farhan Ahmed Majeed
Associate Prof, Department of Thoracic Surgery CMH Rawalpindi.

Objective: To assess the outcome of cervical mediastinoscopic biopsy for diagnosis of indeterminate mediastinal lymphadenopathy and for staging for lung cancer.

Method: 85 patients, most of them referred by physicians or pulmonologists during calendar year 2010 were submitted to lymph node biopsy through cervical mediastinoscopic approach. Age, gender, socioeconomic status, clinical presentation, findings on CT scan chest, result of histopathologic evaluation of sampled nodes and complications were studied.

Results: Out of 85 patients, 55(65%) were male and 30(35%) female. Mean age of patients was 44 years ranging from 17 to 70 years. Cough, fever and dyspnoea were the most common presenting symptoms. Of patients operated for diagnostic purpose (n=72), 40(55%) had tuberculosis and 12(17%) sarcoidosis. 16 patients(22%) were diagnosed to have malignancy. Of these, 7 had SCLC and 1 metastatic NSCLC. 3 had lymphoma, 1 Hodgkin’s and 2 Non Hodgkin’s DLBCL. There was 1 case each of thymoma and seminoma. 3 patients had metastatic carcinoma of unspecified origin. 4 patients had normal lymph node tissue on histopathology. Among staging group 8 patients had negative mediastinal disease with 1 false negative. 1 patient developed hoarseness of voice while 1 patient had wound infection requiring intervention.

Conclusion: Cervical mediastinoscopy is a safe and efficacious means of diagnosis in indeterminate mediastinal lymphadenopathy and staging of Ca Lung. Histopathological diagnosis and tissue cultures are crucial in our setting where patients with neoplastic lymphadenopathy are sometimes treated for tuberculosis or sarcoidosis on clinical suspicion alone. Moreover, staging of Lung Cancer is essential as N2 disease precludes curative surgery. Our results support the continued routine use of mediastinoscopy.

RADIOLOGICAL FEATURES OF CNS TUBERCULOSIS: OUR EXPERIENCE IN A TERTIARY CARE CENTRE OF A THIRD WORLD COUNTRY WHERE THE DISEASE IS ENDEMIC
Dr. Amanullah Beg, Dr. Zahid Anwar Khan, Dr. Shahbaz Alam
Purpose: Tuberculosis is one of the devastating infectious disease, which if not diagnosed and managed early can lead to severe morbidity and mortality. It is seldom seen in western countries and most other parts of world now a days but endemic in South East Asia. Pulmonary tuberculosis is the most common form of disease; however, involvement of other parts of body including central nervous system is not very uncommon. The purpose of this study is to describe and share typical and atypical imaging features of CNS tuberculosis seen on MRI and CT imaging.

Methods and materials: Medical record numbers of patients were retrieved from hospital data base from January 1st 2008 to 30th December 2010. Cases diagnosed as CNS tuberculosis on the basis of clinical, microbiological, histopathological and imaging features were selected. We found 154 patients fulfilling these criteria. MRI brain was done in 129 patients while 25 patients have CT scan examination. All scans (CT/MRI) were reviewed on PACS by two experienced Radiologist and findings were recorded on data sheet. Additional infectious focus in lung, GI or other parts of the body if present was also recorded. All the data was entered in SPSS version 19

Results: Out of 154 patients, there were 91(59%) males and 63(41%) females. Most common imaging finding was thick enhancing nodular meninges 121 (78.57%) followed by hydrocephalus in 67 (43.51%) patients. 57 (37%) patients found to have multiple tuberculomas and only 9 (5.81%) cases have large tuberculous abscesses. We also found acute vasculitis infarcts associated with other findings in 46 (29.9%) patients. CSF AFB smear was positive in 25 (16.2%) patients. CSF glucose was low in 57(37%) of patients, CSF protein was high in 99(64.3%) patients and 98(63.6%) patients had raised TLC in CSF.

Conclusion: CNS tuberculosis now a day’s not very common disease in most parts of the world but very much prevalent in South East Asia. It remains a significant diagnostic problem especially in developing countries. Imaging studies are only suggestive or compatible for the disease and should not be used for confirmation or exclusion of the disease.

CLINICO-RADIOLOGICAL AND MICROBIOLOGICAL PROFILE OF LUNG ABSCESS
Dr. Kumar A, Dr. Ghazal S, Prof. Rizvi N, Dr. Tasleem S

Objective: To evaluate the Clinicoradiological and Microbiological profile of lung abscess

Methodology: Lung abscess cases were evaluated retrospectively from hospital record from January 2010 to January 2011. We found 41 patients of lung abscess in this duration.

Result: Total numbers of patients were 41, out of which 30 were males and 11 were females. Patients were adults of different age groups from 16 years and above. 51.2% of patients were 41 to 60 years of age. On the evaluation of clinical symptoms, productive cough was present in 90.2% of patients followed by fever 82.9% and hemoptysis 58.5%. Significant association was found with smoking in 65.9%. Among the risk factors poor oral hygiene was found in 36.1% patients, diabetes mellitus in 43.9%, sinusitis in 26.8%, pneumonia in 22% and malignancy was diagnoses in 4.9% of patients. On analysis of radiological findings 56.1% of the patients had bilateral and 51.2% had right lower zone involvement. In 36.6% of patients gram negative rods and gram positive cocci was found on sputum gram staining. AFB smear turned out to be positive in 22% of patients while 10% of patients had past history of TB. Sputum culture was with no growth in 34.1% and 29.3% showed growth of pseudomonas aeruginosa. Blood culture didn’t show any growth in 86.6% and only 9.8% had E.Coli growth.

Conclusion: As checked by electronic media it is the first study of Pakistan in which clinical profile of lung abscess has been evaluated. Lung abscess was more common in male, significant association was found with smoking. Most common risk factor was found to be poor oral hygiene. Right lower lung was the main site of abscess and pseudomonas aeruginosa was more common pathogen in sputum culture

ACOMPARISON OF DRUG SENSITIVITY PATTERN IN CATEGORY-I FAILURE VERSUS CATEGORY-I RELAPSE PULMONARY TB PATIENTS ATTENDING A TERTIARY CARE HOSPITAL IN SOUTH PUNJAB, PAKISTAN. IS WHO CATEGORY-II ATT REGIMEN APPROPRIATE?
Shahzad MI*; Shaheen MZ*; Kamran MH*; Dogar LA*; Musthaq MA*; Murtaza HG*; Sardar K*; Sufyan M*; Hafeez A*; Shaheen AA*; Kazmi SA*.
Objective: Pakistan ranks 8th out of 22 high burden countries in TB. According to the WHO Global TB Report 2009, the estimated incidence of all forms of TB in Pakistan is 297,000 cases per year. A study in Taipei showed that drug resistance pattern is different in category-I failure and category-I relapse (69.7% vs. 33.3%). Another study in Vietnam showed that 80% cases of category-I failure had MDR while among category-I relapse MDR was only 8%. Similarly a study in Tehran showed treatment success of category-I failure according to DST pattern was high compared to conventional category-II regimen (72% vs. 50%). We conducted this comparative study to determine the pattern of drug resistance in category-I failure and relapse and also to see if the currently recommended WHO Category-II regimen is appropriate for these two groups.

Methodology: This is a prospective study going on since July 2010. The location of the study is the chest clinic of a tertiary care hospital and an attached DOTS TB center. We enrolled a total of 85 patients over a period of one year who fulfilled the eligibility criteria. Of these 85 patients, 68 were culture positive. Therefore, drug sensitivity pattern was compared within this group of patients. M.TB cultures and DST was done at Aga Khan University Hospital TB laboratory at Karachi which is an accredited laboratory for this test.

Result: A total of 85 patients were recruited, out of which 68 (80%) were culture-positive. Among 68 patients, 29 (42%) were Category-I failure and 39 (57%) were Category-I relapse.

DST IN CAT-I FAILURE GROUP N = 29. Ten had taken DOTS treatment and 19 were previously treated in Non DOTS facility. DST showed 12 (41%) cases were XDR-TB, 7 (24%) were MDR-TB, 5 (17%) were Poly-resistance TB, 3 (10%) were Mono-resistant and 2 (6%) were sensitive to all drugs.

DST IN CAT-I RELAPSE GROUP N = 39. Twenty one had taken DOTS treatment and 18 were treated under Non DOTS treatment facility. DST showed 6 (15%) cases were XDR-TB, 15 (38%) were MDR-TB, 2 (5%) were Mono-resistant, 1 (2%) was Poly resistant and 15 (38%) were sensitive to all drugs.

Conclusion: This study on a relatively small number of patients shows that there is unacceptably high prevalence of MDR, poly resistance and even XDR tuberculosis in both Category –I failure and relapse patients. We could not calculate statistical difference between the two groups due to small number of patients in each group. Therefore a larger study for longer duration is needed to determine whether these two groups should be treated with the same regimen or if different regimens should be formulated for such patients. Our results, however suggest an urgent need to revise our management strategies for both Category-I failure and relapse patients.

Title
Dr Nayyer Abbas
OICD/DUHS,Karachi

Objective: To determine the acquired resistance of Mycobacterium Tuberculosis by culture to 1st line antituberculous drugs in non responding sputum smear positive patients who have taken Category1.

Methodology: About 2 billion of the world’s population is infected with tuberculosis. According to WHO estimates Pakistan ranks 8th among the 22 countries with the highest burden of tuberculosis in the world. Incidence of tuberculosis in Pakistan is 181/100000 of population. Drug susceptibility for 1st line drugs testing is currently recommended for those who have failed a retreatment regime and chronic cases. According to a recent WHO report the global incidence of MDR tuberculosis which is resistance to isoniazid and rifampacin is 4.9% among all tuberculosis patients. It is 3.1% in new cases of tuberculosis while the incidence rises to 19% in previously treated cases. This shows that the strongest risk factor for drug resistance is previous history of tuberculous treatment. Currently the national tuberculosis control program recommends drug susceptibility testing in failures of retreatment cases. This study is being conducted to see the drug resistance pattern in failures and defaulters of initial treatment before starting a retreatment regime as the incidence of drug resistance is high in our region 3.2% in new cases and 35% in previously treated cases. If significant cases of drug resistance are identified in this study it would be recommended to have early drug susceptibility testing for early identification and proper treatment of such cases to prevent further spread of resistant disease.
Result: Among 60 selected patients of category 1 sputum smear positive, 14 (23.3%) were defaulter, 38 (63.3%) relapse and 8 (13.3%) patients were of treatment failure.

Culture sensitivity has shown 58 (96.7%) positive patients and only two (3.3%) were negative.

Multidrug resistance was found in 15 (25%) patients. MDR cases were 6 (42.9%) among 14 defaulters, 4 (10.5%) among 36 relapsed and 5 (62.5%) among 8 treatment failure patients.

Rifampicin resistance was found in 20 (34.5%) patients. Isoniazid was resistant in 19 (32.8%) patients. Ethambutol was resistant in 21 (36.2%) patients. Pyrazinamide was resistant in 21 (36.2%) patients. Streptomycin was resistant in 10 (17.2%) patients. None of antituberculous drug was resistant among two culture negative patients.

Conclusion: We conclude that levels of MDR-TB are very high in patients not responding to CAT1 anti tuberculous drugs in our community.

Pattern of AFB Culture Sensitivity of Chronic T.B Patients and Its Relation with Continuation Phase Regimens Used in the Past.

Anila Basit, Mazhar Ali Khan, Sajjad Ali, Arshad Javaid

Objective: To study the association between the regimen used in the continuation phase and pattern of AFB culture sensitivity achieved in chronic T.B patient.

Methodology: It was descriptive comparative analytical study, conducted in Pulmonology dept Lady reading Hospital Peshawar from sept 2010 to Sept 2011. Symptomatic Patients with Pulmonary TB and suspected of CAT-1 failure, CAT-II failure, Contacts of MDR TB cases either CAT-I or CAT-II and Smear positive patients who has taken irregular treatment were recruited. Patients were interviewed to obtain clinical data like age, sex, symptoms, history about ATT, category of treatment, default etc, Initial base line investigations like chest x-ray, full blood count, urea, and creatinine were obtained. Sputum was sent for AFB to the hospital laboratory. Only patient with positive result were included in the study. Early morning sputum sample was collected in a sterilized container and sent to AKU laboratory AFB culture and sensitivity.

Result: A total of 110 patients were included. 50 (45.45%) were male and 60 (54.54%) were female. Mean age of the patients was 28.3 years with + 13.826 SD. 92 (83.6%) were registered and 18 (16.3%) not registered. Out of 92 patients, 65 (59.1%) were registered with NTP and 27 (24.5%) with PPM. 101 (91.8%) were regular in taking ATT while 9 (8.1%) irregular. Registration group of the patients presented to us were Cat 1 failure 30 (27.3%), Cat II failure 57 (51.8%), Relapse of Cat I 10 (9.1%), Relapse of Cat II 4 (3.6%), Default of cat I 2 (1.8%), Default of Cat II 2 (1.8%) and “other” 5 (4.5%).

Different continuation Phase regimen used by these patients was: 66 (60%) have used HE, 14 (12.7%) RH, 19 (17.3%) RHE.

The outcome of these patients were cured 16 (14.5%), treatment completed 19 (17.3%), treatment failure 70 (63.4%), Defaulted 5 (4.5%).

The 66 patients using HE in continuation Phase 56 (84.8%) were registered; in 14 patients using RH, 11 (78.57%) were registered. 3 (21.42%) 19 HRE group 2 (10.53%) “other” 5 (4.5%) were not registered.

MDR was found in 103 (93.6%) and was not found in 7 (6.4%). Those who used HE, MDR was found in 62/66 (93.4%) patient, and those who used RH, MDR was found in 13/14 (92.85%) and those who used HRE, MDR was found in 17/19 (89.47%) and those who used “other” MDR was found in 11 (100%).

Registration status of these MDR T.B patients in past were analyzed. In 62 MDR patient using HE, 53 (85.49%), were registered and 9 (14.52%) were not registered. 13 MDR pts using RH 10 (76.92%) were registered and 3 (23.10%) were not registered, 17 MDR pts using RHE, 16 (94.12%) were registered and 1 (5.89%) were not registered, 11 MDR pts using Others. 8 (72.7%) was registered and 3 (27.2%) was not registered.

Does Anti Tuberculous Medications Interfere with Culture and Drug Sensitivity Testing of Acid Fast Bacilli in Pulmonary TB Patients?

Arshad Javaid, Anila Basit, Ziaullah, Zafar Iqbal, M Yousaf Khan, Abdul Sattar Pulmonology Department, PGMI Lady Reading Hospital Peshawar
**Objective:** To study the effect of stopping anti TB treatment on the AFB culture and sensitivity result in cases of suspected drug resistant tuberculosis.

**Methodology:** Pulmonary TB patients suspected of having drug resistant TB presenting to Pulmonology department Lady Reading Hospital Peshawar from 15 July 2011 were included in the study. Patients not taking any TB treatment or taking second-line drugs were excluded from the study. It was a comparative study of one year duration. The sampling technique was Convenience (non probability). After entering data, morning sputum sample collected and sent for AFB C/S to AKUH laboratory while patient still on ATT. Another similar sample sent after five days of stopping the treatment. Data collected and analyzed on SPSS to see any difference.

**Result:** So far, 32 patients (11 male and 21 female, age ranged between 14 and 75 years) are included in the study and sputum samples sent for AFB C/S after fulfilling the inclusion criteria. As it takes 6-8 weeks before the final result, we are gradually getting the results and will be able to present the data in the conference.

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**FACTORs INFLUENCING SEX DIFFERENCES IN NUMBERS OF TUBERCULOSIS SUSPECTS AT DIAGNOSTIC CENTRES IN PAKISTAN**

*Mishal Sameer Khan; Muhammad Shoaib Khan; Charalambos Sismanidis, Peter Godfrey-Faussett*

*London School of Hygiene and Tropical Medicine*

**Objective:** To quantitatively investigate the influence of diagnostic centre characteristics on the number of female and male TB suspects registered at diagnostic centres.

**Methodology:** Ten districts were selected across the four provinces of Pakistan. Data was collected on male and female TB suspects in all diagnostic centres within each district. A structured questionnaire was used to collect data on diagnostic centre characteristics. Multiple linear regression analysis was conducted to evaluate the influence of each diagnostic centre characteristic on sex differences in numbers of suspects.

**Result:** Two diagnostic centre characteristics were associated with relatively higher numbers of female than male TB suspects: catering to the local catchment area (p= 0.001) and being accessible by foot (p= 0.002). The following characteristics were associated with relatively higher numbers of male than female TB suspects: being open after 2pm (p= 0.041), having more than five doctors working at the centre (p=0.019), having more than 100 suspects registered per quarter (p=0.008).

**Conclusion:** Smaller, local diagnostic centres that are accessible by foot registered relatively more female than male TB suspects. More centralised facilities located further from homes, larger facilities, and those with evening opening hours registered relatively more male than female suspects.

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**NEED ASSESSMENT OF PUBLIC HEALTH PROFESSIONAL IN SINDH**

*Dr. Sharaf Ali Shah, Dr. Abid Ali Channa*

**Objective:** Need Assessment of Public Health Professionals in Sindh.

**Methodology:** A list of organizations including public and private sectors hiring public health professionals in Sindh was compiled. A questionnaire was mailed through courier to each organization. Those who did not respond were contacted on telephone and visited by the study team to collect information

**Result:** There was acute shortage of trained public health professionals in province of Sindh. Almost 96% positions in provincial & district health departments requiring public health qualifications were occupied by physicians, who did not have any public health qualifications. Similarly in community medicine departments of public & private medical colleges more than 40% faculty positions are vacant, particularly professors.

**Conclusion:** Serious Efforts are required to train Public Health Professionals in the Province. Young Doctors and other professionals may be encouraged to become Public Health Professionals. Public health institutes may be established/already established institutes to offer public
**Primary Default in Pulmonary Tuberculosis at Chest Clinics of Ojha Institute of Chest Diseases, Karachi, Pakistan**

*Dr. Nisar Ahmed Rao, Dr. Ismat Ara, Dr. Iftekhar Ahmed, Dr. Tehzeeb Anwer*

*Department of Pulmonology, Ojha Institute of Chest Diseases, University Road, Karachi*

**Background:** Smear positive tuberculosis patients who do not start treatment are labeled as “Primary defaulters”.

**Objective:** To evaluate and address primary default in pulmonary tuberculosis (smear positive) in patients presenting to chest clinics of Ojha Institute of Chest Diseases, Karachi.

**Design:** A Prospective cross-sectional study conducted during January to June 2010.

**Results:** Out of 7467 tuberculosis suspects 1121/4882 (22.96%) were diagnosed sputum smear positive (SS+) tuberculosis. Out of which, 173/1121 (15.5%) patients were primary defaulters. 91/173 (52.60%) were successfully traced and registered at corresponding clinics or referred to a nearby health facility for treatment. 15 patients (8.6%) were taking anti-TB medication from a general practitioner or consultant, 7 patients (4%) were admitted without registration. 7 patients (4%) were not registered due to pending culture report (suspected Primary MDR-TB). 24 (13.87%) were untraceable primary defaulters. One patient had died at home. Thirty seven out of 173 patients (21.38%) were unaware of their disease. The major reason for primary default was distance to clinic i.e. 83 (47.97%).

**Conclusion:** The primary default is high in the chest clinics of Ojha Institute. Proper counseling of patient and address/contact number documentation at the time of sputum collection will reduce the primary default rate.

**Significance of Fiberoptic Bronchoscopy in Cases of Suspected Pulmonary Tuberculosis.**

*Dr. Riaz Hussain Shah, Dr. Liaquat Ali Memon*

*Chairman, Department of Pulmonology, Chandka Medical College & SMBB Medical University Larkana*

**Objective:** To determine the diagnostic yield of Fiberoptic Bronchoscopy in suspected cases of Pulmonary Tuberculosis

**Methodology:** A prospective study conducted from March 2010 to October 2011. Adult patients who were suspected of having active pulmonary tuberculosis on the basis of abnormal chest radiograph and clinical presentation. Among these patients whose sputum AFB smear became negative or who were unable to produce sputum were included in this study.

**Results:** This study recruited 55 subjects. Among the 55 patients 40 (72.72%) patients bronchial washing showed AFB in both smear and culture. The remaining 15 (27.27%) patients bronchial washing did not show any AFB either smear or culture.

**Conclusion:** Fiberoptic bronchoscopy has good diagnostic yield for pulmonary tuberculosis in suspected pulmonary tuberculosis, in those patients who are unable to expectorate or who is three spectrum AFB similar become negative.

**Management of Complicated Pleuropulmonary Tuberculosis**

*Syed Humayoon Sarwat*

*Dow University of Health Sciences*

**Objective:** To determine the results of Pleural Cavity Sterilization procedure for the “Management of Complicated pleuro-pulmonary tuberculosis”.

**Methodology:** Pleuropulmonary tuberculosis and its complications, pneumothoraces and hydropneumothoraces are relatively frequent conditions in Pakistan and a significant number of these patients get further complicated with the presence and persistence of bronchopleural communications that ultimately result in empyema thoraces and bronchopleural fistulas.
The management of such cases has always been challenging for clinicians as a large number of these (TB) patients are so debilitated that they are unfit for surgery and mortality and morbidity in these patients is significantly high. We treated such cases in the department of thoracic surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences Karachi through the technique of cavity sterilization procedure. This technique is not only innovative as all such cases in the literature are being managed by Decortication combined with Thoracoplasty or Thoracomypoplasty, but is also non-invasive as the patients do not require any general anesthesia or any invasive surgery. The treatment is based on Tube thoracostomy through most dependent inter costal space rather than through triangle of safety and Regular pleural cavity washes with antiseptic solution usually normal saline.

Result: A total of thirty seven patients were treated through this method, at the Department of Thoracic Surgery, Ojha Institute of Chest Diseases, Dow University of Health Sciences Karachi, during July 2002 to December 2008. We achieved 100 % re-expansion of the diseased lung with almost complete anatomical and functional restoration in thirty three patients.

Conclusion: The cavity sterilization procedure comprising of tube thoracostomy with regular pleural wash is a good alternative in the management of complicated pleuropulmonary tuberculosis and conditions like TB Empyema and Broncho-pleural Fistulas as:-
1. It has least mortality and morbidity
2. It ensures complete anatomical and functional restoration of diseased lung in majority of cases as compared to thoracoplasty and thoracomypoplasty where lung re-expansion can not be achieved.
3. The procedure can also be performed in patients who are not fit for surgery
4. This procedure can be performed in any health facility as it does not require any operation theatre or general anesthesia.
5. It is highly cost effective as it greatly minimizes the use of antibiotics and the hospital stay as well.

Patterns Of Presentation and organ involvement in Tuberculosis. A retrospective review of one thousand patients from Northern Pakistan
Dr Kanwal Fatima Khali,"Dr Asma Ambreen.  
1. MBBS, MCFS(MED), MRCP(UK), FCPS(Pulmonology), consultant pulmonologist  Fauji  Foundation Hospital Rawalpindi  
2. MBBS, MCFS(MED), FCPS(MED), registrar pulmonology Fauji Foundation Hospital Rawalpindi  

Objective: To evaluate the frequency of pulmonary and extrapulmonary tuberculosis including their clinical presentation, radiological changes and diagnostic techniques used.

Methodology: The study was undertaken in the Department of Pulmonology Fauji Foundation Hospital Rawalpindi through a retrospective review of all cases presenting to the out patients department from February 2008 to November 2011. Data was collected by non-probability convenient sampling and analyzed by calculating simple frequencies.

Results: Of the 1000 patients evaluated, 800 were female (80%) and 200 were male (20%) and were aged between 14 and 86 years with a mean age of 35 ± 14 years. This large number of female patients might be due to a selection bias as this hospital mainly serves female family members of x-service-men.

The commonest presenting complaint was fever(66%), followed by cough(53%) and weight loss(34%). About 86% of patients had pulmonary tuberculosis, while rest had evidence of extra-pulmonary tuberculosis(EPTB). Among the later group the most common involvement was pleural (56%), followed by lymphadenitis (33%), abdominal(8%), spinal/bone(4%). Multi-organ involvement was observed in 3.5% patients (two organs in 1.5% and three organs in 1%). As many as 12%  of EPTB cases had pulmonary tuberculosis simultaneously.

Conclusion: EPTB still constitutes an important clinical problem .

Co-Infection of HIV and Tuberculosis at Institute of Chest Diseases Kotri  
.Dr. Javed Ahmed Shaikh  
Pulmonologist Institute of Chest Diseeses Kotri
**Objective:** To assess the HIV-TB coinfection at Institute of Chest Diseases Kotri

**Methodology:** Positive smears cases of cat-1 & cat-2 blood samples taken and tested with chromatography method at ICD Kotri.

**Result:** 3 patients were detected as sero positive for HIV/AIDS. This result apparently shows to other studies proving increases co-infection of HIV/AIDS and Tuberculosis. They were confirmed by AIDS control programme by Western blot method.

**Conclusion:** Every patient smear positive AFB should be tested for AIDS. To know the increase tendency to AIDS with Tuberculosis.

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**DIAGNOSTIC ROLE OF PLEURAL BIOPSY IN PLEURAL EFFUSION - REVIEW OF 29 CASES**

*(Dr. Farzana Baig, Dr. Shabbir Raza. Gulab Devi Chest Hospital, Lahore.)*

**Background:** Pleural effusion is the most common manifestation of pleural diseases. However, many times it is difficult to find out cause of pleural effusion despite of routine biochemical and cytological examination. Gold standard of diagnostic value is pleural biopsy which is not given proper importance in many cases. To highlight the need for pleural biopsy, we conducted this retrospective study.

**Methods:** Study included patients of exudative pleural effusion admitted from 1st Jan 2011 to 30th June 2011 where etiological diagnosis could not be yielded by conventional cytological, biochemical and microbiological investigations. Pleural tissues were obtained by Abraham's pleural biopsy needle. Biopsy was subjected to histopathology and ZN staining.

**Results:** Out of 29 patients 18 were male and 11 were female. Histopathology report showed 9 (31.03%) patients had malignancy, 11 (37.93%) had caseous granulomatous lesion, 2 (6.90%) had interstitial pneumonitis, 5 (17.24%) had nonspecific chronic pleuritis and in 2 (6.90%) patients tissue was inadequate and these patients underwent fibroptic pleuroscopy/NATS for pleural biopsy to achieve diagnosis. In 6 (20.69%) patient tissue was smear positive for AFB.

**Conclusion:** Determination of cause of pleural effusion is utmost important for the proper management. This can only be achieved by pleural biopsy in addition to cytological, biochemical and microbiological analysis. Need for pleural biopsy must be emphasized in all cases of pleural effusion to reach at correct diagnosis.

**Key words:** Pleural biopsy, exudative pleural effusion.

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**PROGNOSTIC FACTORS IN TUBERCULOSIS RELATED MORTALITIES IN HOSPITALIZED PATIENTS**

*(Dr. Pervez G, Dr. Kumar A, Dr. Saifuddin F, Prof. Rizvi N, Dr. Ismail S. Chest medicine department, Jinnah Postgraduate Medical Centre)*

**Objective:** To evaluate the factors concerned with in-hospital deaths in patients admitted with Tuberculosis at a tertiary care centre.

**Methodology:** A retrospective case-control study was undertaken at the Pulmonology department of the largest state-run tertiary care centre in Karachi, Pakistan. For patients hospitalized with TB, sixty of those who were discharged were compared with sixty of those who could not survive during hospitalization. Radiological findings, clinical indicators and laboratory values were matched between the two groups to locate poor prognostic factors.

**Result:** Factors concerned with hospital mortality listed female sex (P<0.01), late sequels of disease (P<0.01), not taking anti-tuberculosis therapy (ATT, P<0.01), smoking (P<0.01), longer duration of illness (P<0.01), and low haemoglobin levels (P<0.02). Extrapulmonary TB, dissemination of disease, bilateral radiological findings, co-
morbidities and multi drug-resistance were not implicated in higher mortality. Most deaths occurred during the first week of admission indicating late referrals and presentation as an important factor related to in-hospital fatalities.

Conclusion: Poor prognosis in TB patients was associated with non-compliance to therapy, anemic states, late presentation of disease, and development of complications. Patients not taking ATT and hence having longer duration of illness showed higher mortality and so a more radical and effective treatment regimen is required to eliminate TB early on during the onset of disease.

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**RISK FACTORS FOR MDR PULMONARY TUBERCULOSIS IN PATIENTS ATTENDING MDR TB CLINIC IN KARACHI**

Danish Ahmed Rao, Furqan Ghazi, Nisar Ahmed Rao
3rd Year MBBS student, Hamdard Medical College /Baqai Medical College

**Objective:** According to WHO the incidence of MDR tuberculosis is high in Pakistan with 3.4% primary MDR and 21% secondary MDR tuberculosis. The aim of our study was to determine the risk factors associated with MDR pulmonary tuberculosis.

**Material and Method:** This prospective study was conducted at MDR TB clinic of Ojha Institute of Chest Diseases, Karachi in November 2011. MDR Pulmonary tuberculosis patients of at least 15 years of age were included in the study. Participants were interviewed using a structured questionnaire.

**Results:** The total of 107 subjects was interviewed. Sixty (56%) were male. The mean age was 31.56±13.76 (Range 15-74 years). The mean height and weight were 162.40±09.99 and 43.70±10.07 respectively. The mean BMI was 16.54±03.59 (Range 10.64-30.10Kg/cm2). Only twenty nine (27.10%) were employed, 5 were earning less than Rs. 3000/ month, 20 were earning between Rs. 3-10 thousands/ month and 4 were earning more than Rs. 10,000/ month. Fifty-two were uneducated, 14 studied up to primary, 29 studied up to secondary level while only 12 studied post secondary level. Eighty-one subjects were non-smoker, 24 were ex-smoker and 2 were current smoker. Five subjects were addicted to illicit drugs. All the subjects received anti-TB treatment in the past. The number of courses received was:- single in 32 subjects, two in 59 subjects, three in 14 subjects and > 3 courses in two subjects. Proper regimen was prescribed in 106/107, 71/74 and all 16 subjects during first, second and third course respectively. The duration of ATT therapy was adequate in 66/107(%), 39/74(%) and 11/16(%) during first, second and third course respectively. Poor compliance was observed regarding intake of daily medication in 68/107 (63.55%), 40/74(54%) and 07/16(43.75%) during first, second and third course respectively. Thirty-eight (35.5%) subjects reported TB patient in their family while 05 (4.67%) subjects did not know.

**Conclusion:** Risk factors for MDR pulmonary tuberculosis identified in this study were: Low BMI, unemployment/poor earning, lack of education, Poor compliance with medication intake, inadequate duration of therapy and TB person in the family. Surprisingly cigarette smoking was not identified as significant risk factor for MDR Pulmonary tuberculosis.

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**ANTIBACTERIAL ACTIVITY OF THREE BRANDS OF HONEY AGAINST BACTERIA ISOLATED FROM RESPIRATORY TRACT INFECTIONS IN KARACHI**

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**Objective:** Honey, attributed as a panacea in Islamic teachings, has been used for centuries in many cultures as a healer for a number of ailments. This study aims to verify any antibacterial activity of honey against bacteria concerned with Respiratory Tract Infections in Karachi, Pakistan.

**Methodology:** Three brands of commercial honey, one ‘crude’ and two ‘processed’ (“Salman’s,” Pakistan; “Langnese,” Germany) were used to determine their antibacterial activity against four bacterial species, Klebsiella pneumoniae (n=56), Streptococcus pneumoniae (n=34), Pseudomonas aeruginosa (n=16), and Staphylococcus aureus (n=20), isolated from Sputum and Throat swab specimens of patients presenting with RTI at a local diagnostic lab in Karachi. The ‘cork-bore method’ was employed using Mueller-Hinton agar, and the inhibition
zones around the wells containing honey samples diluted 20%w/v with distilled water were assessed using Imipenem disc (30ug) as the standard of antibacterial activity.

**Result:** Significant antibacterial activity of honey was observed against the 4 RTI isolates. The ‘crude’ sample yielded relatively superior inhibition zones than the other two specimens; it affected all 34 (100%) of pneumococci, 29 of 56 (52%) klebsiellae, 14 of the 20 (70%) staphylococcus, and 4 of 16(25%) pseudomonas isolates. Pneumococci in particular were significantly more sensitive to all 3 honey specimens, while pseudomonas were least sensitive compared to other isolates.

**Conclusion:** Samples of honey showed promising in vitro antibacterial activity on some RTI isolates and thereby were in keeping with its traditional use to alleviate the symptoms and effects of throat infections and productive cough. Further research is recommended on pharmacological grounds.

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**IMPACT OF TUBERCULOSIS ON THE QUALITY OF LIFE IN DEVELOPING COUNTRIES**

*Noureen Kamran, Zulfiqar Ali*

*Baqai Medical University College of Nursing*

**Introduction:** Tuberculosis (TB) control has been accorded a high main alarm within the health sector as it is a most important public health problem. It has been seen that apart from physical symptoms, TB patients are facing a variety of problems that are social and economic in natural history. Therefore, for an inclusive consideration of patients' health status, it is necessary to consider the overall impact of TB on health and patients' perception of well being or quality of life, besides schedule clinical, radiological and bacteriological evaluations.

**Objectives:**

- To identify the various approaches to improve the patient’s perception on well being for TB patients.
- To identify the domains used to assess the impact of TB on quality of life.

**Method:** Systematic review of the literature from 10 research articles gathered through print and electronic media device published between the years 2003 to 2007.

**Results:** TB somatic symptoms have been well studied, while there is no clear-cut casual study of effects on physical functioning or general health perceptions. Patients tend to be worried, frustrated, or disappointed by their diagnosis, but it is unknown how emotional health changes with treatment. Diagnosed patients are less likely to find work, and less able to work and care for their families. TB creates the greatest financial burden on the poor. In developing countries, families sometimes exclude patients; the extent of TB's social stigma in the developed countries is unknown.

**Conclusion/recommendations:** It is recommended that sufficient health teaching and information about tuberculosis has been established to be most effective when given as one-to-one compliance. A better understanding may help improve treatment regimens, adherence to treatment, and functioning and well-being of people with TB.

Key words: Quality of life, Domains, Impact

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**SEASONALITY OF PRIMARY CARE UTILIZATION FOR ACUTE EXACERBATION OF ASTHMA IN JPMC, KARACHI**

*Nadeem Rizvi[1], Zeeshan Raza[1], Ayesha Ahmed[1], Fatima Ahmed[1], Aiman Ghan[1]*

**Background:** Asthma is a chronic and heterogeneous airway disease with significant global impact. It is considered to be a disease influence by genetic and environmental factors. Despite its increase global prevalence, asthma admission patterns vary between different countries [1,2]. The environmental factors strongly tilt the balance over genetic factors as causative factors [3]. Identifying seasonal periodicity can provide elements for researching environmental factors and altered organic responses that provide guidance for the institution of preventive measures [4].

**Objectives:** To examine the seasonal trends in asthma related hospital admissions and its effect on the mortality of the patients.
Methodology: A retrospective study in which data was retrieved from admissions due to acute exacerbation of asthma in JPMC, AKUH and LNH for the duration of two years (2009-2010).

Results: There were total 2503 patients observed. The results demonstrate that the seasonal episodes of asthma increased in the summer season [5] with a peak occurring in the month of March. The incidence of asthma was more commonly found in patients above 45 years of age (N=1490, 72.4%) while the patients of female sex (N=1336, 64.9%) were more frequently the victims of acute exacerbation. There were 64 expired cases (3.1% of all hospital patients).

Conclusion: The highest number of patients were admitted in the month of March (spring season) [5]. Thus, clear seasonal variation can be observed in the number of patients requiring admission in the spring season in Karachi due to acute exacerbation of asthma, but we found no relevant seasonally-related differences in disease characteristics with reference to age-group and gender.

HIGHLIGHTING ‘AIR POLLUTION’ AS THE MAIN RISK FACTOR OF FREQUENT UPPER RESPIRATORY TRACT INFECTIONS.
Anoshia Raza (principal author), Uzma Majeed, Madiha Ariff, Umer Effendi and Ehsan Faquih.
Dow Medical College, Baba-e-Urdu, Karachi.

Objective: “To study the risk factors, symptoms, frequency, medication and prevention of Upper respiratory tract infections (URTIs or URI) and to compare it between the medical students of a college located in a polluted environment with a college located in a relatively non-polluted environment.”

Methodology: Only medical students of the above mentioned colleges participated in this research. A standard questionnaire was prepared. The sample size of this study was 500 in which 250 questionnaires each were filled in by the students of DMC and LNMC. Firstly the questionnaire was thoroughly explained to the participants and then later on they were required to fill in the questionnaires themselves. The data analysis was done on SPSS version 16.0 software.

Result: Two risk factors, exposure to patients of URTI and air pollution were taken into account to compare the frequency and severity of symptoms of URTI. Although the students of both the colleges are quite often exposed to the patients of URTI; however in comparison there is not a significant difference between the frequencies of exposure to patients of URTI between the students of both the institutes. The monthly, quarterly, bi-annually and annually figures for the frequency of upper respiratory tract diseases for the students of DMC were 12.4%, 31.5%, 15.9% and 21.5% respectively which are significantly higher as compared to students of LNMC the percentages for which are 18, 2.4, 2.4 and 9.2 respectively. The variation in the frequency of URTI is explained on the basis that the DMC is situated in an area that has high levels of air pollution as compared to the location of LNMC. The symptoms of URTI more prevalent in students of DMC were throat irritation 21%, cough19.9% and post nasal drip16.7% whereas headache35.7%, fever15.2% and cough14.7% were more common in amongst LNMC students. Self medication was the preferred treatment option amongst the students of both the colleges.

Conclusion: The above mentioned percentages of frequency and severity of symptoms of URTI significantly proves that due to exposure to high levels of pollution, the students of DMC are more prone to becoming a victim of URTI in contrast to the students of LNMC.

HOW TO APPROACH FOR UNEXPLAINED PERSISTANT COUGH
Prof. Nazim Hussain Bukhari
MD, FCCP.

Objective: In otherwise healthy individuals Immediate diagnostic work-up is essential in all patients presenting with chronic cough (.8 weeks duration); If they prove inconclusive, investigate for upper airway disease, cough-variant asthma or gastro-oesophageal reflux disease

Methodology: Review of literature
Result: Cough is a complaint associated with virtually all pulmonary and several extrapulmonary diseases. Cough is also a contributing factor in the spreading of infectious disease, such as tuberculosis. Moreover, (acute) cough due to the common cold is one of the most frequent causes of transient airway hyperreactivity. Hypersensitivity of the cough nociceptors elicits pathological cough. Numerous respiratory and other diseases cause cough nerve hypersensitivity and thus, produce cough. In a considerable number of clinical cases, however, only cough nerve sensitivity is affected without another “specific” cause. Such patients are suffering from idiopathic cough.

In otherwise healthy individuals, immediate diagnostic work-up is essential in all patients presenting with chronic cough; a chest radiograph and lung function test should be performed immediately. If they prove inconclusive, check for upper airway disease, variant asthma or gastro-oesophageal reflux disease and use of ACE inhibitors / beta blockers. This is consistent with the recommendations in all published guidelines on cough.

Common cold is the most common cause of cough and usually subsides spontaneously, in otherwise healthy persons, after 2–3 weeks. Upper airway allergic diseases, Hay fever, and intermittent persistent allergic rhinitis, often in combination with sinusitis, conjunctivitis, pharyngitis and laryngitis, can also trigger acute cough. Itchy eyes and throat are usually characteristic of these diseases.

Dry cough can elicit or worsen an asthma attack. Cough-variant asthma is characterised by dry cough and BHR. Wheezing, dyspnoea and bronchial obstruction are absent. Chronic cough with proven BHR can only be confirmed as variant asthma if treatment (inhaled corticosteroids or b2-stimulants or leukotrien modifiers) eliminates the cough.

Cough is also triggered either by reflex, through reflux to the pharynx and larynx (laryngopharyngeal reflux), or micro aspirations of gastric juice. Cough due to reflux can occur with or without heartburn and does not necessarily coincide with reflux oesophagitis (non erosive reflux disease). The gold standard of the reflux diagnosis is a triple-sensor, 24-h pH probe and impedance pH probe. If gastro-oesophageal reflux-related cough is suspected, evaluate double-dose proton pump inhibitor treatment for a period of 2–3 months to alleviate cough. If a patient with chronic cough is using an ACE inhibitor, stop or replace their treatment for 3 weeks before starting further diagnostic.

This presentation reviews advancement in our knowledge about the diagnostic workup and appropriate management of idiopathic cough.

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**Diabetes Mellitus Among Tuberculosis Patients Admitted in Gulab Devi Hospital Lahore**

**Dr. Muhammad Ijaz Nasir, Gulab Devi Hospital. Dr Shahid Raça**

Gulab Devi Chest Hospital Feroze Pur Road Lahore.

**Objective:** To find out the frequency of DM, describe the socio demographic facts and determine the sputum conversion among TB patients admitted in Gulab Devi Hospital.

**Methodology:** A descriptive cross-sectional study with pretested questioner covering all the variables and checklist to find out the frequency of diabetes mellitus among tuberculosis patients. 1st pt selected by systematic random sampling. Data was entered in epidata-6, cleaned, analyzed, frequencies and p-values calculated using epi Info.

**Result:** There is high level of convergence of diabetes mellitus with pulmonary tuberculosis (25.9%). The disease is located 74.7% in rural areas where the level of income is very low (less than Rs. 7000/- per month). The other important associated factors are illiteracy (72.8%) and malnutrition. The Disease also occurred in pretreated (31%) and in patients having no family history of pulmonary Tuberculosis in ratio of 87.3% and (70.3%) patients belonged to category-1 depicted the emergence of new cases. However, the encouraging point is high sputum conversion ratio 78% in diabetics and 82.1% in non diabetics which is comparable.

46.3% diabetic patients were male & 53.7% were females and among non diabetics, 66.7% were male & 33.3% were females, indicated disease is more prevalent in males. The sputum conversion pattern was comparable in both groups showing a ratio of 78%:82.1% in diabetics and non diabetic respectively.

Out of 158 patients 87.97% responded to my study 10.13% became LAMA, 1 (0.63%) patient expired and 2 (1.27%) were transferred out.

**Conclusion:** The main culprit of the disease is poverty (88%). Other important associated risk factors are illiteracy (72.8%), malnutrition (92.41%) and living in rural areas (74.7%).
A thorough health education campaign on mass media with political and government involvement with special emphasis for the control of diabetes mellitus, TB and provision of healthy food, good & easy accessible educational facilities in rural areas is required.

MANAGEMENT OF MONO AND POLY DRUG RESISTANT TB
Syed Khurshid uz Zaman
Galab Devi chest Hospital Lahore

As the surveillance of MDR TB is increasing more and more number of mono and Poly drug resistant cases are being discovered. Multiple regimens are being tried as standard guidelines for management of such cases are not available. Even treatment of such cases with standardized regimens leads to Treatment Failures and further resistance including MDR .If the pt was receiving functionally only R+Z( in the presence of resistance against E+H)the resistance against R will develop .Thus it becomes very essential to know on which drugs pt was ,since the specimen was sent and date treatment regimen started. Another important factor is that DST of Ethambutol and Pyrizinamide is not dependable.

The decision to treat Poly drug resistant cases is not a simple decision and requires much of expertise. Preferably in the absence of standard guidelines a panel of experts in the field of Tuberculosis should decide about treatment regimens. Pts with extensive disease require a longer duration of treatment and may require addition of Quinolones. In cases of resistance against H and either E, or Z, or S a long duration of treatment, 9----12 month is recommended with addition of Quinolones. In cases of resistance against R and either Z, or E or S ,a longer course of 18 months duration with Injectable is recommended.

ASBESTOSIS – CLINICAL FINDINGS AND MANAGEMENT
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Objective: To emphasize on the occurrence and clinical findings of asbestosis and to discuss its management in the light of studies and researches.

Introduction: Asbestosis is a form of pneumoconiosis defined as lung fibrosis caused by inhalation of asbestos fibres which cause lung scarring and inflammation. Symptoms include Dyspnea (with exertion), persistent cough, fatigue, laboured and rapid breathing and chest pain. Prolonged exposure to asbestos particles and cigarette smoking are its main causes.

Methodology: It includes the clinical tests, prevention and treatment.

Radiographical findings: The characteristic finding is the presence of small, irregular opacities in the midlung and lower lung zones, according to International Labour Organization.

Pulmonary Function Tests: The characteristic PFT finding is a restrictive ventilatory defect. Vital Capacity (VC) and Total Lung Capacity (TLC) is reduced. TLC is reduced due to alveolar wall thickening. FEV1/FEV1 is well-preserved.

Prevention: According to a research carried out in the US, people who have been exposed to asbestos for more than 10 years, screening with a chest X-ray every 3 to 5 years may detect asbestos-related diseases early. Smoking cessation can prevent asbestos-related lung cancer.

Treatment: There is no curative treatment
• Oxygen therapy for dyspnea
• Supportive treatment of symptoms include respiratory physiotherapy to remove secretions from lungs by postural drainage, chest percussion and vibration.
• Nebulized medications.
Case study: Asbestos bodies and fibres deposited in the lungs of seven asbestos patients were counted after tissue digestion. In a microscopic study at 100X, more than 13 asbestos bodies were found in a 4-micron thick tissue area. Intensity of fibrosis was minimal in one case, mild in four, mild and severe in one each. The fibrosis in the severe case may have been intensified by repeated infection. According to Health and Safety statistics 2010/2011, almost 100,000 people die of it annually.

Result: If the patient is diagnosed with “rales” on auscultation, preventive measures should be taken to prevent further progression and complications which are COPD, malignant mesothelioma, pleural effusion, pleural plaques and lung cancer.

Conclusion: Asbestosis is a much better predictor of excess lung cancer risk than measures of exposure and serves as a marker for attributable cases. So, According to Pakistan Medical Research Council (PMRC), efforts to prevent, track, and eliminate asbestosis need to be maintained.

FREQUENCY OF LUNG CANCER DIAGNOSED BRONCHOSCOPICALLY IN A TERTIARY CARE CHEST FACILITY
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Objective: To evaluate various types of lung malignancies diagnosed through bronchoscopy, and their presentation.
Methodology: This descriptive study was based in a tertiary care chest facility in Peshawar. Duration of the study was from June 2005 - June 2009. The material was obtained from the bronchoscopy record in the chest clinic. All the patients bronchoscoped from June 2005 – June 2009 were studied for their outcome.

Result: This study included 425 patients, 306 (72%) were males and 235 (55.3%) of patients were between 31-60 years age. Ninety two (21.6%) patients were diagnosed with lung cancer; of which 73 (79.5%) patients were males and 19 (20.5%) were females. Sixty five (70.7%) of the 92 patients initially presented with shadow on the Chest radiograph, 9 (9.80%) patients had superior vena caval obstruction, 8 (8.70%) patients presented with lung collapse, 6 (6.52%) with haemoptysis, and 4 (4.35%) patients with hoarseness of voice. Forty three (46.7%) patients were diagnosed with squamous cell carcinoma, 29 (31.5%) with adenocarcinoma, 17 (18.5%) with small cell type carcinoma and 3 (3.30%) patients had large cell type carcinoma. Fifty four (58.7%) patients of the 92 were smokers or had a history of smoking. Anthracosis was found in 45 (10.6%) patients out of all the 425 patients. Conclusion: Commonest type of lung cancer in this study was squamous cell (46.7%) followed by adenocarcinoma (31.5%) and small cell carcinoma (18.5%). Squamous cell carcinoma was strongly associated with cigarette smoking as compared to adenocarcinoma in this study.

RIFAQUIN
Author

Research question: To compare treatment outcomes and early relapse rates of the standard 6-month regimen with two alternative treatment regimens for the treatment of tuberculosis, using an open-label 3-arm clinical trial.
If shown to be as effective, the trial regimens have potential to replace currently recommended first-line regimens for patients with TB in resource-poor settings, since they are less onerous to take and supervise.

Trial regimens: Control regimen: 2 months of daily ethambutol, isoniazid, rifampicin and pyrazinamide followed by 4 months of daily rifampicin and isoniazid (2EHRZ/4HR). This is the standard 6-month first-line regimen in use in Zimbabwe. Trial regimens: 2 months of daily ethambutol, moxifloxacin (400mg od), rifampicin and pyrazinamide, followed by a) 2 months of twice weekly moxifloxacin (400 mg) and rifapentine (900mg) (2EMRZ/2P2M2) orb) 4 months of once weekly moxifloxacin (400mg) and high dose rifapentine (1200mg) (2EMRZ/4P1M1)

Rationale: Tuberculosis and HIV are two of three major diseases in the developing world; the incidence of new cases of tuberculosis has increased dramatically in recent years, due in large part, to co-infection with HIV. Effective short course regimens of chemotherapy for the treatment of pulmonary tuberculosis have been evaluated in numerous controlled trials worldwide. These are currently 6-8 months in duration. When adequately administered, they are capable of cure rates (defined
here as bacteriological cure at the end of treatment and no early relapse) of 95% or more in patients with drug sensitive organisms. Routine treatment services, however, do not typically achieve such good outcomes. Sub-optimal adherence to treatment is likely to make a major contribution to this difference. Adherence is increased by direct observation of therapy (DOT), but DOT for the full 6 to 8 month adds considerably to the expense and inconvenience incurred by patients and health providers alike and is considered impractical in a many resource-poor countries, including Zimbabwe. If the continuation phase, which starts 2 months into TB treatment, could be administered once or twice weekly instead of daily, this would reduce the number of treatment doses that patients have to take and might also reduce toxicity as well as the cost of treatment. It would facilitate DOT for the entire treatment period, potentially leading to lower failure and relapse rates. If the length of treatment could also be shortened without loss of efficacy, this would also improve adherence to treatment and further reduce costs.

The objective is to investigate the potential of two FDA approved drugs, rifapentine (a rifamycin from the same class of compounds as rifampicin) and moxifloxacin (a fluoroquinolone), to allow intermittent doses in the continuation phase and/or treatment shortening while retaining satisfactory treatment outcomes and preventing the emergence of rifamycin mono-resistance. Rifamycin mono-resistance is a particular concern for patients with HIV-related TB, since early relapse with rifampicin mono-resistance was observed among 6 or 30 HIV-positive participants in an American trial of once weekly rifapentine (600 mg) plus isoniazid in the continuation phase. Each relapsing patient had late-stage HIV infection, low CD4 counts and documented co-administration of antifungal azoles. Resistance to rifapentine results in cross-resistance to rifampicin. Ability to prevent the emergence of drug resistance is an essential attribute of TB treatment regimens and so, even at low rate, would preclude further consideration of our trial regimens. In the current trial, our hypothesis is that the combination of a) moxifloxacin plus b) higher dose of rifapentine (to maintain adequate trough levels) will be sufficient to prevent the emergence of rifamycin monoresistance with intermittent dosing. Treatment shortening to 4 months will also be investigated in one trial arm. In mouse models of TB treatment, substitution of moxifloxacin for isoniazid achieved more rapid sterilization than rifampicin, isoniazid, pyrazinamide combinations. Moxifloxacin has other attributes that may make it particularly well suited as a companion drug to rifapentine, including a similarly long half-life of about 14 hours (the longest of the fluoroquinolones with high activity against M. tuberculosis); greater bactericidal activity against dormant bacilli than isoniazid in vitro; and metabolism by different pathways, making drug-interactions unlikely.

Outcomes:
Primary outcome measure
- Combined rate of failure at the end of treatment and relapse by 18 months
- Presence of rifamycin monoresistance in relapse cultures of HIV infected patients
- Occurrence of serious adverse events at any time during chemotherapy

Secondary outcome measure
- Sputum conversion results at two months after the initiation of chemotherapy
- Rate of completion of chemotherapy according to the protocol
- Number of observed doses of chemotherapy ingested
- Any adverse events

Methods:
Study design and rationale
An open-label 3-arm clinical trial powered to demonstrate non-inferiority of the two trial arms compared with the standard 6-month TB regimen. Non-inferiority has been chosen because the aim of the trial is not to improve on efficacy, since cure rates are already very good with the standard regimen, but rather to investigate whether a more convenient regimen can still achieve good outcomes. Non-inferiority requires a larger sample size than equivalence testing. The trial is a multicentre study involving newly diagnosed smear-positive TB patients in 4 Southern African countries (Zimbabwe, South Africa, Zambia, and Mozambique). Two study sites (Beatrice Road Infectious Disease Hospital [BRIDH] in Harare, and Marondera Provincial Hospital) will contribute 270 and 140 smear-positive participants, respectively, from Zimbabwe, to the total study size of 1,250 regional participants.

Inclusion and exclusion criteria: Patients will be eligible for inclusion if they have newly diagnosed pulmonary TB, as evidenced by 2 positive sputum smears, and each of: - i) no previous treatment for TB, ii) aged 18 years and above; iii) a firm home address within the catchment area of BRIDH or Marondera with no intention of moving during the trial period, iv) able and willing to give informed consent to participate in the trial and to give a sample of blood for HIV testing. Exclusion criteria include: - i) co-morbidity (except HIV) that may prove fatal during the...
study period, or prejudice the response to, or assessment of, treatment, or lead to uncooperative behaviour; ii) TB meningitis; iii) pregnancy or breast-feeding; iv) contraindications to any of the study medications; iv) Hb < 7g/L; or AST or ALT > 5 x upper limit; or creatinine clearance < 30mls/min; or weight < 35kg; v) history of seizures; vi) requires antiretroviral treatment at diagnosis (including CD4 count < 200/mm3); vii) initial resistance to isoniazid, rifampicin, or moxifloxacin

Recreation: Patients will be recruited from the TB clinics at BRIDH and Marondera using a two-step informed consent procedure, whereby patients will first give written informed consent to eligibility screening (blood count, creatinine; liver function tests, Liver function tests; HIV test, CD4 count if HIV-positive; chest radiography; urine dipstick for glucose; pregnancy test for women of child-bearing age. Eligible patients will be invited to enter the trial after a second written informed consent. This will introduce a 24hr delay in starting TB treatment, which will be explained to the patient and is unlikely to have significant clinical or public health consequences, given that most patients will have been infectious for several weeks to months before staring their therapy. Patients subsequently found to have initial drug resistance will be withdrawn before the continuation phase, and treated with an appropriate regimen.

Treatment and follow-up: All drugs in the trial regimens will be supplied as loose (not fixed combination) tablets, including drugs in the standard TB regimen. Pyridoxine (10-50 mg daily) will be supplied to all patients in the control arm. Throughout the period of treatment, every dose will be given under direct supervision by a treatment supervisor or domiciliary treatment monitor. Patients will be seen in the study clinics at least once weekly during treatment and followed-up for 12 to 14 months thereafter. Sputum for microscopy and culture will be taken at the time of enrolment, monthly from months 2 to 12 inclusive, and at months 15 and 18 months (12 to 14 months after treatment completion, according to regimen). Positive cultures occurring in the month before TB treatment is due to stop, or at any time thereafter, will be investigated as indicating possible treatment failure / relapse with 2 further sputum specimens for culture drug susceptibility testing. Treatment will be modified / restarted if failure / relapse is confirmed by two positive cultures. Any trial arm accruing 2 or more patients with rifamycin-monoresistance will have enrolment discontinued pending further investigations. HIV-positive participants will be started on cotrimoxazole and referred for ART treatment according to international recommendations and local policy. Patients requiring ART while still on TB treatment will be started on efavirenz-based regimens, with supply of efavirenz in Zimbabwe guaranteed by MSF-Spain (Harare) and MSF-Holland (Marondera). Providing appropriate HIV care to trial participants will be the responsibility of Harare City Health and Marondera Hospital, and not the trial. There are ART clinics at both BRIDH and Marondera Hospital

Specimen export: For the purposes of i) quality control and ii) timely investigation, a 10% sample of sputum specimens collected for culture, a 10% sample of all positive cultures, and a duplicate of all specimens collected to investigate possible treatment failure or relapse will be sent to London by courier for parallel culture and drug sensitivity testing, according to the trial bacteriology protocol. Permission to export sputum specimens is requested for this purpose. Due to the different technologies in place, the London laboratory will be able to give culture and drug sensitivity tests within 7 to 10 days of receiving specimens, whereas the Harare laboratory will take 3 to 8 weeks for the primary culture alone and a further 3 weeks for drug sensitivity testing. Retreatment of patients with failure / relapse will be the responsibility of the trial, and will use predefined regimens chosen according to their drug sensitivity results, so that rapid provision of sensitivity results will directly benefit patients. For purposes of better understanding the pharmacokinetics of the two trial regimens, a sub-sample of 70 patients in each rifapentine/moxifloxacin arm at BRIDH will be asked for separate consent for 3 blood specimens taken 2 ± 0.5, 5 ± 0.5, and either 24 ± 3, or 48 ± 3 hours after dose ingestion during the continuation phase of their treatment (sparse sampling). We request permission from MRCZ and will make separate application to the Research Council of Zimbabwe to export 3mls of frozen plasma (courier on dry ice) for analysis by the Pharmacology Department, University of Cape Town, South Africa.

Two South African sites (Cape Town and Johannesburg) will also contribute, making a total of 200 participants in each trial arm, and a further 30 participants from Cape Town will contribute specimens for intensive PK sampling (10 samples over 24 hours). Rifapentine and moxifloxacin levels will be analyzed using liquid chromatography-tandem mass spectrometry and structural PK models built for each of the drugs (rifapentine at doses of 1200 mg/week and 900 mg twice weekly, and moxifloxacin at 400 mg/week) to describe the concentrations of each drug over time, in the study population as a whole, including any differences conferred by covariates such as age, sex and weight. There are scientific benefits from having all specimens analysed by a single unit (less measurement variability), and it also a theoretical future benefit for Zimbabwe in having Zimbabwean participants included in this analysis. Patients with failure/relapse will be compared to those with a satisfactory outcome for any differences in standard PK parameters (Cmax, half-life and AUC).
Risks / benefits: The main anticipated risks relate to the study drugs. Moxifloxacin has been used extensively throughout the world as an antibiotic, and is also used for prolonged periods as a second-line TB drug. It has an excellent safety profile. Rare serious adverse effects include neurological toxicity (seizures, psychiatric disturbance) and tendonitis that can progress to rupture. Rifapentine has been widely used in the United States since approval in 1998 for treatment of TB and latent TB infection.

The manufacturer’s recommended dose is 600mg once or twice weekly, but there is increasing experience with higher doses (900mg and 1200mg), which appear to be as well tolerated as the 600mg dose. There is growing recognition that higher doses are preferable, because rifamycin-monoresistance can emerge at the 600mg dose. Rifapentine is closely related, and has a similar adverse-event profile, to rifampicin (the TB drug it will replace in this trial) and is no more toxic. Rifapentine does not cause “flu-like” syndromes due to hypersensitivity on intermittent dosing (unlike rifampicin). Both rifampicin and rifapentine can cause hepatitis, and both cause frequent drug-interactions through induction of the cytochrome p450 system. Experience with rifapentine in pregnancy is limited, and is not recommended. In this trial, pre-enrolment pregnancy testing will exclude pregnant women from entering the trial and women of child-bearing age will be given advice on contraception (rifamycins can lead to failure of oral contraceptive pills). A further risk is relapse with rifamycin monoresistant organisms. The risk is considered small in this trial (because of the use of 900mg /1200mg doses of rifapentine). There will be active surveillance for this event, and suitable alternative retreatment regimens that have shown good outcome in HIV-positive patients will be provided by the trial. All adverse events will be reported, according to GCP guidelines. Serious adverse events will be reported to the Trial Manager at MRC Clinical Trials Unit (UK) and MRCZ within 24 hours. An independent data safety and monitoring committee (IDMC) will meet every 4 to 6 months during the trial to consider safety data, and to monitor the conduct of the trial with respect to ethical aspects. The IDMC will report to the Trial Steering Committee. Benefits will include the indirect benefits of being a trial participant (TB treatment under trial conditions shows better outcomes than treatment under routine conditions) and, for HIV-infected patients, closer liaison between TB and HIV services than may occur in routine settings. A major benefit to HIV-positive clients taking the trial arms will be that isonizid, which commonly causes or exacerbates peripheral neuropathy especially when taken with D4T, is not part of trial regimens.

Costs and compensation: Patients will receive a meal (2 boiled eggs and bread) before taking rifapentine, and will be compensated for their transport and time (approx 3 to 5 USD equivalent per visit). Insurance against medical costs incurred by trial participants from negligent and non-negligent harm has been taken out with Royal and Sun Alliance (GBP 5,000,000 total liability for all 1,250 trial participants).

Confidentiality assurances: Data will be stored under an allocated study identity number, plus the initials and data of birth of the patient. Files will be kept in locked cupboards, and electronic data will be held in secure databases. HIV testing will be offered with counselling and receipt of results to all patients, according to the national policy of opt-out HIV testing for all TB patients. In the event of patients consenting to provide blood for HIV-testing without wanting to know their results, blood will be run under the identity number only, with results stored separately from other trial data to ensure no breach of confidentiality.

Conflict of interest: None

Collaborative agreements: Approval was obtained from the ethics committees of St Georges Hospital, London, London School of Hygiene and Tropical Medicine, Biomedical research and Training Institute, Medical Research Council Of Zimbabwe and the Medicines Control Authority Of Zimbabwe. Permission to export samples was obtained from Research Council of Zimbabwe. Biomedical Research And Training Institute, Institutional Review Board also approved the study.

Intended use of results: If successful the results of this trial would be of global relevance: shortening TB therapy and once-weekly treatment regimens have been prioritised as goals likely to lead to better global TB control. Implementing a change in the international recommendations for first line TB therapy in resource-limited settings would require consensus, negotiated price reduction, and pre-approval of manufacturers. Mechanisms exist within UN Agencies for each of these steps if this trial is successful. The Chief Investigator and the British MRC have both played an important role in developing the 6-month TB regimes currently in use in Zimbabwe, and were responsible for “Trial A”, reported in 2004 that has resulted in a move away from the 8 month regimen previously in use in Zimbabwe and other African countries (because of high relapse rates). As such the investigators of this trial are unusually well placed to
influence future policy and practice.

**Funding and trial governance:**
The study is funded by the European and Developing Countries Clinical Trials Partnership (EDCTP), with the Chief Investigator being Dr Amina Jindani of St Georges University of London; Department of Cellular and Molecular Medicine. The Medical Research Council (UK) Clinical Trials Unit will supervise data collection and compliance with Good Clinical Practice at each trial site. The local principal investigators are Dr Stanley Mungofa (co-PIs for BRIDH site), and Dr Simukai Zizhou (Marondera Hospital). The trial physician for Harare (BRIDH) is Dr Nasir Ali Shah Syed and for Marondera is Dr Lloyd Magwetta

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**COMPREHENSIVENESS OF PRIMARY HEALTH SERVICES. DESCRIPTIVE STUDY IN RAWALPINDI DISTRICT IN PAKISTAN.**

Fatima R, Qadeer E

Pakistan ranks 6th amongst the high burden TB countries in the world and harbor 63% of tuberculosis burden in EMRO WHO. The Health Care System Hierarchy may lead to higher initial default at various level of health delivery system.

**Aim:** The aim of the current study was to compare tertiary care hospitals and peripheral diagnostic centres with respect to the proportion of patients classified as ‘initial loss to follow up’. This information is needed in order to guide policy to improve the efficiency of tuberculosis care. No study on this subject and with this particular comparison has previously been reported from Pakistan

**Design and Methodology:** A descriptive study was conducted to determine the true rates of initial default at primary and tertiary level. The data of patients of 2009 cohort from lab register were compared with patient registered in the TB register. The Data was collected from 16 peripheral diagnostic centers and five Tertiary care hospitals.

**Results:**
- A total of 16,145 suspects were screened for TB and recorded in the laboratory registers in the district: 9,711 in the tertiary care hospitals and 6,434 in Rural Health Centre. There was a total of 1,698 smear positive patients (10% of suspects registered), significantly higher in Rural Health Centres (n = 856, 13%) than in tertiary care hospitals (n = 842, 9%) [OR 1.62, 95% CI 1.46 – 1.79, p<0.01]
- Among the smear-positive patients recorded in the laboratory registers, 101 (6%) could not be identified in the treatment registers. In tertiary care hospitals, the number who could not be found was 86 (10%) compared with the Rural Health Centres where 15 (2%) were not found (Table). The difference was statistically significant [OR 6.4, 95% CI 3.6 – 11.6, p<0.01]. The frequency of initial loss to follow up increased with advancing age (p<0.01, chi-square test for trend). The associations with other variables such as sex and distance from health facility were not found statistically significant. There was a lower proportion of smear-positive patients not found in the Rural Health Centres, as compared with the tertiary care hospitals, no matter how far they lived from the facility.

**Data collection and validation:**
- The data collection tool was piloted prior to the study.
- The principal determinant of the study was the type of health facility (rural health centre or tertiary care hospital) and the outcome variable was the patient labeled ‘initial loss to follow up’. Additional information collected included age, sex, and address (complete address including street address) to assess the distance from the health facility.
- The search of registers in the whole District was undertaken to identify duplication of registration and was continued for three months (one calendar quarter) after the close of the study period to ensure that patients who were subsequently recorded were not missed

**Conclusion:**
- The results of the study demonstrate the need to devise strategies to improve the monitoring of smear positive case registration, improved follow up and care at large in tertiary care hospitals in Pakistan. Decentralization of services may be one option. National consensus is needed on an approach to trace and register these infectious patients.
Moreover, the failure to account for these patients in routine reports may lead to false estimates of treatment success.

- The study was limited by the fact that it was confined to one district of the country and used routinely recorded data so the accuracy and completeness of data could not be ensured. Clearly, after implementation of measures to address the problem, there will be a need to reevaluate these to document if the registration of smear positive patients improves in tertiary care hospitals.

THE STRATEGIES TO IMPROVE COMMUNITY PARTICIPATION IN TB DISEASE PREVALENCE SURVEY. DESCRIPTIVE STUDY PAKISTAN
Fatima R, Qadeer E

Objectives:
- The objective of the study was to compare the results of first pilot and second pilot through record review.
- To describe the strategies involved in the improved participation in two survey pilots.
- The objective of the prevalence survey was to estimate in a nationwide representative survey the prevalence of bacteriological confirmed pulmonary tuberculosis among the adult population (≥15 years) in Pakistan in 95 selected clusters during 2010-11.

Study Design and evaluation Population:
- The study population of the survey was all eligible household members aged 15 years and over living in the selected clusters will be screened for TB symptoms and by chest X-ray (CXR). Household members suffering from cough for more than 2 weeks or of any duration and/or have CXR abnormal shadows are requested to submit two sputum samples, one on the spot and one morning sample. The spot sample is examined for AFB smear in the field lab (cluster level) while the morning sample will be collected and transported to National reference Lab (NRL) Islamabad for sputum smear examination and culture.
- Sample size of the survey was 133000 adults aged 15 years or more.
- First pilot was done in Aug 2010 in the Union council Kalyam Awan in Rawalpindi district in the duration of 14 days. The strategy followed for screening was that the team leader did the presurvey visit 2 weeks before the field work starts to train the lady health workers and to visit the area for accommodation and access to the cluster site assessment. The field work began with the census where all the eligible adults were entered in the census register and survey ID cards were issued to eligible adults with data and time mentioned. The eligible adult when comes to the cluster undergoes symptom screening first and then followed by chest X-ray irrespective of symptoms all go through the chest X-ray. Those found abnormal on chest X-ray are sent to smear examination. There should be one spot sample and one morning sample the morning sample should be transported to NRL Islamabad for smear examination and culture. At the end of each day the team leader is required to check all the forms and tally from the screening questionnaire and chest x-ray form and the smear microscopy so that no relevant information is missed. The target for each cluster is to train 1400 adults in 14 days of fieldwork at each cluster site. At the end of cluster the data is transported to the central level for data entry. All abnormal and 20% of normal radiographs are sent to the central Radiology team for central reading for quality assurance purpose.

First Pilot was done in August 2010
- LOW Participation:
  - Lack of any incentives for the survey participants which tends to reduce motivation to come to cluster site.
  - Low male participation, it was observed that there was low male participation because most of the males go to work in the day so the cluster timing need to be adjusted.
  - Death of main religious leader in the vicinity of cluster which affected the participation of the community of the area.
  - Unusual heavy rains falls during field work affected participation as people didn’t prefer to go out of house.
  - Holy month of Ramadan was another reason because the cluster was in majority Muslim community and because of fasting people preferred to stay at home.

2nd Pilot (1st Nov - 15th Nov):
- Strategies tested and effect on participation.
- Improved communication skills of the LHWs through training session during pre-survey visits. It was observed during first pilot that the communication skill of the survey team was not proper, it was emphasized in these trainings that the team must communicate effectively with household members in local language and softly so that they can understand the importance of participation in the cluster for screening.
Organizing a social mobilization event in the cluster. It was decided that a social mobilization event will be held in each cluster on first day of fieldwork to attract community to the survey site with awareness messages given and community attracted to participate.

Provision of basic medicines to the participants. In first pilot routine medicines were not given but in second pilot routine medicines with cough syrups, painkillers, multivitamin were provided which successfully increased participation.

Engaging community leaders, religious leaders and school teachers it was observed in the previous cluster that the local leaders were not involved fully in the first pilot so it was ensured in second pilot that the local leaders were fully engaged which increased participation tremendously.

Participation rate of 82% achieved

Conclusion:
Prevalence survey low participation is a key challenge for the country undergoing survey and specific efforts such as improved communication skills, enhanced motivation, adequate advocacy and involvement of local community can greatly improve the participation to achieve targets.

Active case finding among high risk groups in urban slums in Pakistan (Sindh Province) involving general practitioners by using new diagnostic tools

Globally, there are an estimated 3 million TB cases that go undetected each year which lead to continued transmission and death. In Pakistan, 24% of the smear positive estimated tuberculosis (TB) cases are not reported to national TB programmes the neglected areas which need focus are urban slums. The types of people we are focusing upon are slum population with limited access. People living in slums are considered to have difficult lives. The biggest problems for those living in slums are lack of water, sewerage and electricity. The poor environmental conditions and high population density makes slum dwellers vulnerable to tuberculosis

Objectives:
- To increase the case detection of smear positive TB through active case finding
- To test frontloading strategy and LED based fluorescence microscopy to reduce initial defaulting and increase the sensitivity of direct smear microscopy, respectively.
- To improve access to Quality DOTS by engaging private practitioners and CBO in target population.
- To Develop linkage between Private Providers and Public facility in Urban slums

Study Design and evaluation Population:
Randomized controlled trial with internal control To measure the impact of the integrated intervention

Activities:
- Activity 1: Mapping and training of General Practitioners
- Activity 2: Train and support laboratories’ staff on quality diagnosis for TB
- Activity 3. Chest Camps in the catchments area of each urban slum
- Activity 4: Conduct community awareness-raising activities
- Activity 5: community coalition for treatment support and follow up, TB Patients Empowerment
- Activity 6. Developing health care services linkage of targeted population with district health system

Conclusion:
The project is going on successfully with engaging increasing number of private GPS and arranging chest camps. The General practitioners benefited from a large amount of publicity for providing free services to the community and also was able to prescribe a basic set of medicines that were free of charge. The additional cases identified will be included in the routine data
**Success Story of Patient**

TB REACH Project arranged a camp in Orangi Town Area Baloch Goth at Al-Shifa Hospital on 06th of May 2011 where 450 patients visited out of which there were 20 suspects. Out of the mentioned suspects, one patient named Ameer Ali was found positive. Upon investigation we found out that he was a hawker and he hadn’t gone to work for the past three months due to his health and being the sole earner of his house he was under serious crisis.

On sputum microscopy Ameer Ali was diagnosed as a pulmonary TB patient and his treatment was started on 07th of May 2011. He was registered at Al-Shifa Hospital. Dr. Hanif Arien is his GP.

After a week, as designed our designated field officer visited Ameer’s house where Ameer revealed that because he was diagnosed with TB, he was facing the stigma our field officer with the help of the treatment supporter designated to Ameer went to the family where they both assured them that they had screened all the family members and none of them were diagnosed with TB apart Ameer and that Ameer’s condition was improved with negative on follow up test. He resumed his work successfully and was thankful to TB REACH project.

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**SUPPLEMENTARY CHOLECALCIFEROL IN RECOVERY FROM TUBERCULOSIS, THE SUCCINCT STUDY; A RANDOMIZED, CONTROLLED CLINICAL TRIAL OF VITAMIN D REPLACEMENT IN PATIENTS WITH PULMONARY TUBERCULOSIS**


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**Introduction:** Vitamin D is recognized to be important for immune homeostasis. *In vitro* work suggests that 1,25-(OH)2D3 modulates host cell responsiveness to the T cell cytokine, interferon gamma (IFNγ). IFNγ is one of the key mediators of protective immunity against *Mycobacterium tuberculosis* infection therefore; vitamin D may enhance the host immune responses against the pathogen. The objectives of this study were to determine whether supplementation of vitamin D in patients with Tuberculosis could impact recovery.

**Results:** 238 patients completed the study. At the end of 12 weeks, the vitamin D arm demonstrated significantly greater mean weight gain; + 4.02 (95%CI 3.18,4.86) v/s + 2.61 (95% CI +1.99,2.23), p 0.007 and increases in BMI; + 1.48 (95% CI 1.17, 1.78) v/s + 0.96 (95% CI 0.72,1.20), p 0.008 as compared with the placebo arm. There was a significant difference in chest radiographic improvement in the vitamin D group; number of zones involved - 2.21 (95% CI -1.91, -2.51) v/s -1.77 (95% CI -1.51, -2.03), p 0.031 and resolution of cavitation 73(65.7%) v/s 60 (55%), p 0.05.

No significant differences were observed in ESAT6 or MTBs - induced IFNγ responses between the placebo and vitamin D arms at 12 weeks, although there was a trend towards greater IFNγ secretion in the vitamin D group, p 0.077. MTBs-induced IFNγ secretion at 12 weeks significantly increased, p 0.022 in the vitamin D arm.

No differences were seen in TB score or sputum smear conversion. At follow up there was a significant increase in mean Vitamin D levels of the treatment arm; 62.88 v/s 55.21 (95% CI 53.2, 64.9), p 0.007.

**PULMONARY TALCOSIS: AN UNUSUAL PRESENTATION**

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Talcosis or talc pneumoconiosis is one of the rarer forms of lung disease which is almost exclusively encountered secondary to occupational exposure or intravenous drug abuse of Talc. We describe here an unusual case of talc pneumoconiosis which occurred after a brief exposure to sniffing of talcum powder.

**Case Report:** 24 years old lady, presented to pulmonary clinic for evaluation of her abnormal Chest X-ray which was done on a routine pre-employment medical check-up. At the time of presentation she was asymptomatic without any respiratory symptoms (no fever, cough, sputum or weight loss etc) her review of systems also didn’t reveal any other complains.

Patient told that around two year prior to this presentation she had a chest-x-ray done which showed patchy infiltrates are noted in both upper zones with subtle small nodules on left lung (Figure 1) after which she underwent bronchoscopy which was inconclusive and no definite diagnosis was made and patient then lost to follow his physician.
She was smoker and occasional Hashish and alcohol user. She was not on any regular medications and no prior drug allergies as well. At presentation she is pleasant, well-looking lady, with no respiratory distress maintaining Oxygenation (SPO2 98%) on room air. Her physical exam including the chest examination was also unremarkable. This time her chest X-ray showed patchy infiltrates in both upper zones and very small nodular densities the left mid and lower zones without any significant change from the previous X-ray (Figure 2). Later on Her CT scan chest was done showing bilateral nodular infiltrates through out the lung fields bilaterally (Figure 3). She was planned for Bronchoscopy and transbronchial biopsy. Her bronchoscopy revealed normal airways without any endobronchial lesion. BAL taken from both upper lobes and Transbronchial biopsy taken from LLL and Lingula. Later on her biopsy result showed multinucleated giant cells in alveoli which are engulfing some polarizable foreign material with a note that is there any significant history of exposure to some inhalant irritant? (Figure 4) After the report she gave the history of regular sniffing of talcum powder at the age of 14 years for few months. She was diagnosed as a case of Pulmonary Talclosis secondary to inhalation of talcum powder.

**Conclusion:** This case describes very unusual presentation of talc pneumoconiosis but at the same time also highlights the importance of a thorough medical history which can guide to reach or at least think of infrequent diseases.

**Keywords:** Talcosis, Pneumoconiosis,
Case no.1: 27yrs old female presented 3 days after normal vaginal delivery with severe shortness of breath. Her history was significant for rhinorrhea, cough, myalgias and fever 2 days prior to delivery. She had no sick contacts. When presented in E.R tachypnic, tachycardiac with oxygen saturation of 75% at room air. On examination she had harsh vesicular breathing. Her lab work up showed Hb:11.4, TLC:3.4 with 71% N, 21% L, PLT:279. She had normal renal functions. Her ABGS showed PH:7.37, PaCO2:38, PaO2:41, HCO3:22 and saturation of 75% at room air. Her CXR showed bilateral alveolar infiltrates. She had normal echo. Because of impending respiratory failure she was intubated. She was started on broad spectrum antibiotics and oseltamivir after sending pan cultures and nasopharyngeal swab for H1N1. She had refractory hypoxemia not responding to maximum ventilator support. Considering some proven benefit of steroids in H1N1 she was started on I/V steroids. Initially she responded well but later hospital course became complicated by bilateral pneumothoraces and HAP. Subsequently her refractory hypoxemia recurred. She died on 53rd day of admission.

Case no.2: 35 yrs old female admitted 2days after normal vaginal delivery with similar complaints as the first case. Her mother and children had novel H1N1 infection proven by nasopharyngeal swabs. Her ABGS at admission showed PH:7.44, PaCO2:36, PaO2:43, HCO3:25, Sats:70% on 15 litre oxygen. Her CXR showed bilateral alveolar infiltrates with normal echo. She was intubated in E.R. She was treated with broad spectrum antibiotics and oseltamivir. She remained on high ventilator support. Her hospital course was complicated by VRE bacteremia, bilateral pneumothoraces and candida UTI for which she was treated appropriately. After initial clinical stability her hypoxemia recurred. She expired on 48th day of admission.

Conclusion: H1N1 influenza in pregnancy can be associated with severe complications. Widespread vaccination, prompt diagnosis, and adequate treatment with antiviral medications when infection occurs are required, as high mortality rates are reported for pregnant and post partum patients.

SUPPLEMENTARY CHELCALCIFEROL IN RECOVERY FROM TUBERCULOSIS, THE SUCCINCT STUDY; A RANDOMIZED, CONTROLLED CLINICAL TRIAL OF VITAMIN D REPLACEMENT IN PATIENTS WITH PULMONARY TUBERCULOSIS

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Introduction: Vitamin D is recognized to be important for immune homeostasis. In vitro work suggests that 1,25-(OH)2D3 modulates host cell responsiveness to the T cell cytokine, interferon gamma (IFNγ). IFNγ is one of the key mediators of protective immunity against Mycobacterium tuberculosis infection therefore; vitamin D may enhance the host immune responses against the pathogen. The objectives of this study were to determine whether supplementation of vitamin D in patients with Tuberculosis could impact recovery.

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ANALYSIS AND REFERENCE VALUE OF SIX-MINUTE WALKING DISTANCE IN HEALTHY PAKISTANI SUBJECTS

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Background: Six-min walk test (6MWT) is useful in assessing functional exercise capacity of individuals with cardiopulmonary disease. Previous authors have published predictive equations for 6MWT distance (6MWD) among diverse populations groups with varying results. However, regression equations have yet to be established for the Southeast Asian population. We aimed to determine the 6MWD for healthy Pakistanis, identify factors affecting 6MWD and derive an equation.

Methods: Subjects between 15 and 65yrs were prospectively enrolled after screening. A standardized 6MWT was administered. SpO2, HR, BP and dyspnea scores were determined pre and post-test.

Results: 296 subjects [211 (71%) men and 85 (29%) women] participated. Mean age was 373±12 yrs. The mean 6MWD for all participants was 469.88 ±101.24m (range 180m - 756m) [ mean 502.35 ± 92.21m :women 389.28 ± 74.29m]. On univariate analysis gender, weight, height and age showed a significant relationship with the 6MWD. Sub analysis revealed a significant direct relationship between height (r=0.485, p=0.001) and weight (r=0.212, p<0.001). Gender and age were identified as independent factors in multiple regression analysis, and together explained 33% of the variance.

The regression equation predicting 6MWD is:  
\[ y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon \]

With an intercept term (\( \beta_0 \)), slope parameters (\( \beta_1, \beta_2, \beta_3 \)), one dichotomized variable of gender (\( X_1, X_1 = '0' \) if the subject is female, and ‘1’ if male).

The sex-specific prediction equations are:

- 6MWD (m) for men = 164.08 + (78.06*1) - (1.90*age) + (1.95*height)
- 6MWD (m) for women = 164.08 - (1.90*age) + (1.95*height)

Comparison with published equations revealed a moderate overestimation of the 6MWD in our population.

Conclusions: 6MWDs among Pakistanis are shorter than predicted by reference equations in literature. The proposed equation gives predicted (mean) 6MWDs for adult Pakistani naïve to the test when employing standardized protocol. Prospective validation of this equation in future larger community based studies is warranted.

TELEMEDICINE IN DIAGNOSING SPUTUM NEGATIVE TB CASES IN DEVELOPING COUNTRY
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Introduction: Optimal use of limited human, technical and financial resources is a major concern for tuberculosis (TB) control in developing nations. To diagnose sputum smear negative TB (SS-ve TB) specialists are not uniformly available at distant places.

Objective: This study compared the accuracy and efficiency of an electronic method of diagnosing SS-ve TB patients to the conventional face-to-face (F2F) method.

Methods: This twin center study was conducted at Gambat, a rural town and Orangi, an urban town. Patients with suspected tuberculosis who were SS-ve were recruited for twelve months starting January 2010. Sputum for AFB culture was obtained at enrollment. Digitized chest X-rays (CXR) and a form outlining the clinical history were emailed from remote centers (Gambat and Orangi) to the e-TBDC (a Radiologist and a Pulmonologist separately) at an urban health care center AKU for expert consultation. The F2F diagnostic decision at the remote centers was also recorded in the digital form.

The e-TBDC doctors recorded their decisions in digital format and sent it to the research team. The decisions of the e-TBDC were compared to the “conventional F2F diagnostic decision” and with the “Gold standards”. The 2-month clinical follow up assesses deterioration or improvement in the symptoms and weight of the patient to judge the accuracy of the original diagnosis.

Results: 101 participants enrolled. Mean age was 37.89 (SD=19.2) years. 56.4 % were male.

There was agreement in the decisions of 79 cases (78.2%) and disagreement in 22 cases (21.8%). The agreement of e-TBDC was higher with urban spoke site physician (84.2%) as compared to rural spoke site physician (70.5%). The turn-around time (TAT; patient registration at spoke site for f-2-f diagnosis to receiving the electronic diagnosis), averaged 29.7 hours (range 0.15 to 288.9 hours). Average TAT at the rural site was 47.7 hours compared to the urban site of 15.8 hours.

Using culture as the gold standard TB F2F decisions were slightly (31.7% positive) more sensitive as compared to e-TBDC (29.6% positive). Validation with 2 month clinical follow-up also showed improvement in symptoms and
weight of the patients (93% and 55.2%) by F2F as compared to e-TBDC (85.7% and 44.4%). Similarly, F2F decisions showed higher specificity (93.5%) taking culture result as gold standard as compared to e-TBDC decision (94.7%). However, e-TBDC decision were more specific in ensuring symptomatic improvement and weight gain in patients (73.5%, 46.4%) diagnosed with NO TB as compared to F2F (65.3% and 30.7%).

Conclusion: This pilot study provides an innovative technology solution to the distant area where consultants are not available, to provide quality health care, to address problems in the diagnosis of sputum smear negative TB (x-ray based diagnosis) through telehealth.

POST INTUBATION TRACHEAL STENOSIS - A CASE REPORT
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Introduction: Tracheal stenosis, a well-known complication of endotracheal intubation and mechanical ventilation, is most likely to occur in critically ill patients requiring prolonged mechanical ventilation. Although a rare complication, and despite technological improvements and better patient care in intensive care units, tracheal stenosis still constitutes a serious clinical problem which can also develop after a short period of mechanical ventilation. The area of the trachea that is affected is usually 2 cm long and involves the anterior and lateral walls. The posterior wall is relatively protected from stenosis.

Case Summery: 45 years old obese gentleman K/C Hypertention, Ischemic cardiomyopathy, Nephrotic syndrome, OSA presented to ER with four days history of shortness of breath, fever and cough. He had history of liposuction in the recent past for which he remained in ICU and was mechanically ventilated for about a week time. At the time of presentation he had hypoxia, tachycardia and tachypnea. Possibility of acute pulmonary embolism was ruled out and the treatment for heart failure was optimized but he did not respond clinically. Spirometry (figure 1) was performed which showed fixed airway obstruction. Fibre optic bronchoscopy (figure 2) confirmed the diagnosis of tracheal stenosis secondry to endotracheal intubation. The patient underwent tracheal reconstruction surgery and was discharged home.

Conclusion: Possibility of post intubation tracheal stenosis is high in mechanically ventilated patients particularly those with high endotracheal tube cuff pressure. Spirometry is the simple and easy test that can diagnose fixed upper airway obstruction even at bedside.

ACUTE PULMONARY EMBOLISM PRESENTING AS STATUS ASTHMATICUS
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Introduction: Massive pulmonary embolism (PE) is a common and fatal disease. Mortality from massive PE can be reduced by early diagnosis and aggressive treatment. Due to its non-specific presentation more than half of all PE
remain undiagnosed. Untreated massive PE is associated with a very high mortality rate of over 50 percent. Typical presentation of massive PE is with sudden onset of chest pain with dyspnea along with signs of severe hypoxia and hypotension. Below is a case of massive pulmonary embolism presenting as status asthmaticus and shock.

Case Report: A 31 year old male with no past medical history presented with a 2 day history of flu like symptoms of cough, rhinorrhea and progressive shortness of breath. He was seen at an outside hospital and managed as acute asthma with partial improvement. On the day of presentation he woke up with acute shortness of breath followed by unconsciousness. On arrival to ER he was diaphoretic and unresponsive. His blood pressure was 50/20 mmHg, pulse 140/min, respiratory rate of 26/min. His oxygen saturation on room air was 80 %. On exam he had cold extremities and bilateral polyphonic wheezes.

Soon after arrival to ER patient he went into pulse less electrical activity, was intubated and underwent CPR for 10 minutes. Arterial blood gases showed severe respiratory & metabolic acidosis, other labs including chest radiograph and EKG were unremarkable. Despite aggressive management of asthma with steroids and bronchodilators and vasopressors and fluid for shock the patient stayed hypotensive. Due to persistent hypotension and severe acidosis an echocardiography was done, which showed a dilated and hypokinetic right ventricle with paradoxical interventricular septal motion. The estimated pulmonary artery systolic pressure was 60 mmHg. A spiral CT of the chest was performed, which showed extensive bilateral pulmonary thrombi identified in both the right and left main pulmonary arteries extending into the lobar branches (Figure 1). The patient was given intravenous streptokinase bolus followed by an infusion for 24 hours. Over the course of the next day his shock improved and the wheezing disappeared. Subsequently the patient made a complete recovery and was discharged home on oral anticoagulation.

Conclusion: Acute Pulmonary embolism should be considered in the differential diagnosis of severe bronchospasm with hemodynamic compromise especially if the patient doesn’t respond to initial therapy.

![Figure 1: Spiral CT scan Chest showing Bilateral Pulmonary thrombi](image1.png)

![Figure 2](image2.png)

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**EFFECTIVENESS OF SMOKING CESSATION SKILLS BUILDING WORKSHOPS IN EDUCATING SMOKING CESSATION TECHNIQUES TO PAKISTANI PHYSICIANS**

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Introduction: Physician advice to quit smoking is an effective component of a smoking cessation strategy. Several studies demonstrate that physician education on tobacco counseling is associated with increased comfort and practice in advising patients who smoke. Similarly published data clearly demonstrated that this education improves physicians’ smoking cessation skills which in turn increase smoking cessation rates among patients.

Objective: To determine the effectiveness of smoking cessation skills building workshops in training of smoking cessation techniques to Pakistani physicians

Methods: Four full day smoking cessation skills building workshop were arranged in different part of the country. Doctors from all over Pakistan which included General Practitioners (GPs) Chest Physicians, Cardiologists, Residents, and House Officers voluntarily participated. A validated pre-formed questionnaire assessing the attitude and knowledge about smoking was administered prior to the start of the workshop. At completion of the workshop same questionnaire was again re-administered.
Results: Total of 113 doctors attended the workshops in which 90 were men. Age ranged from 22 to 61 years (mean age ±SD is 37±11). Out of these 113, 33 doctors were GPs, 11 chest physicians, 11 cardiologists, 8 consultant physicians and 11 were house officers. After the workshop the physicians felt very confident about their knowledge to treat nicotine dependence 15.9% (pre-workshop) vs. 64.6% (post-workshop); they (physicians) seemed very confident in discussing the smoking cessation issue with their patients 52.2% vs. 80.9% and also they themselves felt them very knowledgeable regarding pharmacotherapy 9.7% vs. 49.1%. Regarding the technical knowledge of the subject response is also favorable e.g. the 5As approach answered correctly by 17.7% vs. 69.9% in pre and post workshop respectively; regarding Nicotine Replacement Therapy correct answer given were 39.8% vs. 61.1% in pre and post workshop respectively; while regarding Bupropion adverse effects 46.9% vs. 71.1% physician gave correct answer in pre and post workshop questionnaire respectively.

Conclusion: The full day smoking cessation skills building workshop was able to significantly improve the confidence of the participants in dealing with smokers, discussing the anti-smoking issue with their patient and their knowledge about anti smoking therapy and its side effects.

Keywords: Smoking cessation, Workshop, Nicotine replacement therapy.

VITAMIN D DEFICIENCY AND RISK FOR DEVELOPING PULMONARY TB
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Introduction: Apart from the nutritional benefits of Vitamin D; immune homeostasis is also being recognized as an important function; for e.g. 1,25(OH)₂D₃ induces anti-mycobacterial activity in monocytes and macrophages. As reports of widespread vitamin D deficiency emerge, it is hypothesized that low levels of vitamin D may predispose to the development of mycobacterial disease.

Objective: We carried out this study to assess whether an association exists between the vitamin D status of an individual and the development of pulmonary Tuberculosis (TB).

Methods: In a cross sectional design, we surveyed close contacts of patients diagnosed with pulmonary TB over a 3 month period, October – December 2009. Contacts had serum vitamin D levels measured and screening chest X rays performed. All those with abnormal X rays had sputum samples collected for AFB smears. No contacts had been screened previously, nor were they under treatment for latent TB infection.

Results: 75 contacts were surveyed, 19 (25.3%) had abnormal chest X rays.15 of these were smear positive for acid fast bacilli. Mean serum Vitamin D levels in contacts that developed TB were significantly lower; 10.2 ± 7.4 v/s 14.1 ±6.6,  p 0.03 than those who did not develop TB in the 3 month follow up period. There were no significant differences found in the BMI between these two groups. Low serum vitamin D also was not found to correlate with BMI, pvalue= 0.84.

Conclusions: Low serum vitamin D levels appear more commonly in contacts that develop TB. It would seem that supplementation of dietary vitamin D maybe a cost effective strategy in the prevention of mycobacterial disease.

DOES FAILURE TO FIXED DOSE COMBINATION MEAN DRUG RESISTANT TUBERCULOSIS?
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Background: For the last many years, it was observed that significant numbers of tuberculosis patients treated with Fixed Dose Combination (FDCs) were not responding to treatment and were labeled as Drug Resistant Tuberculosis (DR-TB). It was hypothesized that treatment of these cases with separate drugs will improve the outcome.

Objective: To evaluate the response to separate drugs in patients who fail to respond to FDCs.

Methodology:Prospective study, from May 2006 to July 2008.

Setting: Ojha Institute of Chest Diseases, Aga Khan University Hospital & private practice.
Included patients were suffering from tuberculosis (smear positive/ tubercular Pleural effusion & TB lymph node). They did not improve after receiving at least three months of four drug FDCs in adequate WHO recommended dose. The recruited patients were prescribed regimen consisting of Ethambutol and pyrazinamide as separate drugs and Rifampicin and INH as FDCs as per body weight. Clinical response was evaluated in all while microbiological & radiological parameters were evaluated where feasible.

Results: Out of total 94 patients 54 (57.4%) were male. The 56 (59.6%) cases were of Pulmonary tuberculosis, 16 (17%) TB Lymph node and 22 (23.4%) tubercular pleural effusion. All patients have used adequate four drug FDCs for adequate period and were compliant with the therapy. At the end of two month: Overall clinical response was adequate in 90 (95.7%) patients, among pulmonary cases, 40/56 (71.4%) converted smear negative, among pleural effusion cases, all improved clinically & radiologically and among TB lymph node group, node regressed in all 16 patients with healing of discharging sinuses of all six patients.

Conclusion: Patients who fail on FDCs should be given a trial of Separate Drugs anti-tuberculosis drugs before labeling DR-TB.

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PRIMARY DEFAULT IN PULMONARY TUBERCULOSIS IN CHEST CLINICS OF KARACHI

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Objective: To evaluate the magnitude & reasons of primary default among smear positive pulmonary tuberculosis patients diagnosed at three chest clinics of Ojha Institute of Chest Diseases, Karachi, Pakistan.

Method: Prospective study, conducted from 1st January 2010 to 30th June 2010. All tuberculosis suspects were asked for three sputum samples for Acid Fast Bacilli (AFB) smear examination. From the laboratory register list of sputum smear positive tuberculosis patients was prepared. Then the list was counterchecked with ‘district TB register’ for registration for treatment and those who did not report for treatment initiation were labeled as ‘primary default’. Those with sputum negative for AFB were excluded later. Sputum positive patients were cross checked for registration and initiation of treatment. Those who did not get registered for treatment were labeled as Primary default. They were then contacted on phone or home visit by field officer. They were informed of the diagnosis and asked to get themselves registered for the treatment. Patients, who registered at the clinic, were asked about reasons for not reporting.

Results: The three clinics cumulatively identified 7467 tuberculosis suspects. 5167 (69.19%) suspects submitted sputum while 2585 (34.61%) did not. 1121(21.69%) were diagnosed sputum smear positive (SS+) tuberculosis. 947 (84.5%) patients got themselves registered for treatment while 173 (15.5%) patients did not (primary defaulters). Out of 869 tuberculosis suspects, 224 were diagnosed as smear positive pulmonary tuberculosis cases. Out of 224, one hundred sixty-two get themselves registered for treatment. The remaining 62/224 (27.67%) was initial defaulters. On telephonic contact, 55 (88.70%) were traceable while 07/62 (11.29%) was Untraceable-default. Twenty-four patients (38.70%) reported to the clinic and they were registered for treatment. The most common reason for default was ‘dissatisfaction with services at the clinic’.

Conclusion: The high primary default is a serious issue that needs to be addressed urgently.

Keywords: Initial default, pulmonary tuberculosis, Pakistan

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GRAPHIC TOBACCO HEALTH WARNINGS: WHICH GENRE TO CHOOSE?

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Background: Tobacco prevention studies show that graphic health warnings are more effective than text warnings, but there are no data on the effectiveness of different types of graphic health warnings in a Pakistani population. Even marginal differences in the effectiveness of genres can be of potential significance for public health.

Objective: To study the effectiveness of different types of graphic tobacco warnings in a Pakistani population.

Study Design: We presented ten anti-smoking warnings to randomly selected volunteers (n = 170) and recorded their opinion on the effectiveness of each warning. The warnings were based on a range of images aimed at the diverse population interviewed. A grading scale based on appeal, application, educational potential and motivation towards cessation was used to produce a composite grade of perceived effectiveness of the warning.

Results: Our results indicate that graphic warnings reach a greater proportion of the population than text warnings. Those appealing to logic, and those inculcating a sense of fear by showing a deleterious outcome of smoking, were judged likely to be most effective in motivating smokers to quit and preventing experimental smokers from forming a habit.

PERCEPTIONS OF ANTI-SMOKING MESSAGES AMONGST HIGH SCHOOL STUDENTS IN PAKISTAN
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Background: Surveys have provided evidence that tobacco use is widely prevalent amongst the youth in Pakistan. Several reviews have evaluated the effectiveness of various tobacco control programs, however, few have taken into account the perceptions of students themselves regarding these measures. The aim of this study was to determine the most effective antismoking messages that can be delivered to high-school students in Pakistan, based on their selfrated perceptions. It also aimed to assess the impact of pictorial/multi-media messages compared with written health warnings and to discover differences in perceptions of smokers to those of non-smokers to health warning messages.

Methods: This study was carried out in five major cities of Pakistan in private English-medium schools. A presentation was delivered at each school that highlighted the well-established health consequences of smoking using both written health warnings and pictorial/multi-media health messages. Following the presentation, the participants filled out a graded questionnaire form, using which they rated the risk-factors and messages that they thought were most effective in stopping or preventing them from smoking. The Friedman test was used to rank responses to each of the questions in the form. The Wilcoxon Signed Rank test used to analyze the impact of pictorial/multi-media messages over written statements. The Mann Whitney U test was used to compare responses of smokers with those of non-smokers.

Results: Picture of an oral cavity cancer, videos of a cancer patient using an electronic voice box and a patient on a ventilator, were perceived to be the most effective anti-smoking messages by students. Addiction, harming others through passive smoking and impact of smoking on disposable incomes were perceived to be less effective messages. Pictorial/multi-media messages were perceived to be more effective than written health warnings. Health warnings were perceived as less effective amongst smokers compared to non-smokers.

Conclusion: Graphic pictorial/multi-media health warnings that depict cosmetic and functional distortions were perceived as effective anti-smoking messages by English-medium high school students in Pakistan. Smokers demonstrated greater resistance to health promotion messages compared with non-smokers. Targeted interventions for high school students may be beneficial.

SPIROMETRIC STANDARDS FOR PREDICTED FEV1 AND FVC IN NORMAL PAKISTANI SUBJECTS
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Introduction: Spirometric evaluation of FEV1 and FVC are variable dependants of ethnicity, gender, height and age. International standards of predicted FEV1 and FVC are derived from normal caucasian individuals and extrapolated to different ethnic populations. Predicted normals vary with ethnicity, and established practice is to use a 15%
reduction in FEV1 and FVC to account for these. Our objective was to determine whether such predicted FEV1 and FVC apply to our population, and whether there was any correlation in our observed data versus predicted standards.

**Methods:** We accessed our PFT lab database to extract spirometric data for adult subjects (age > 16 years) over the last 5 years. Subjects who were asymptomatic and had normal spirometry by ATS criteria were included in the database. Predicted FEV1 and FVC obtained according to ATS recommendations. Data was analyzed using SPSS 18.

**Results:** Data was analysed on 2453 subjects. 81% (n=1988) were male, 19% (n= 465) were female. Median age for males was 40 yrs, range (16–75) years, for females 44 yrs (range 16 – 75) years. Median height for males was 170 cm, (range118 - 190) cm, and for females was 156 cm (range 116 - 175) cm.

Using a two tailed Pearson correlation model significant at 0.01 level, a weak correlation was noted between Predicted FEV1 vs. Actual FEV1 (r=0.105) and Predicted FVC vs. Actual FVC (r=0.454). On univariate and multivariate models, age, height and gender are independent predictors of FEV1 and FVC, statistically significant at the 0.01 level.

**Conclusion:** In our population, there is a weak correlation between standardized predicted parameters vs. observed parameters of both FEV1 and FVC. Both FEV1 and FVC are a function of gender, height and age. Our analysis highlights the need for a prospective study to evaluate and establish normal FEV1 and FVC parameters for our population.

**Keywords:** Ethnicity, Predicted FEV1, Predicted FVC, correlation analysis.

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**EXPERIENCE WITH A CHRONIC VENTILATION SERVICE**


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**Introduction:** In Pakistan increasing numbers of patients are surviving critical illness, but require long term ventilation. Prolonged ICU stay has limitations from scarcity of beds, rehabilitative efforts and financial costs. Home or facility based ventilation has become accepted practice for such patients. We developed a home-based chronic ventilation service and present data from the Chronic Vent Registry.

**Methods:** All ventilator-dependent patients discharged home on portable ventilators from January 2000 – December 2010 were contacted at 12 months post-discharge. Survivors were administered an Urdu translation of EuroQOL (EQ-5D) quality-of-life questionnaire, evaluating mobility, self care, usual activities, discomfort, anxiety and a single index value on visual analogue scale. Primary caregiver administered the questionnaire to the patient. SPSS 16 used to analyze data.

**Results:** 52 patients discharged home on portable ventilators on either A/C or SIMV modes, vent settings adjusted to pre-discharge ABGs. Mean age was 49 years (range10-98 years). Ventilatory failure related to cervical spine trauma (36%), neurological disease (27%), critical illness neuropathy (18%) and respiratory failure (18%). One year survival rate was 72% (38 patients). 50% (26 patients) were successfully weaned, mean duration of ventilation 9.45 months (95%CI 3.24, 15.67). 36% (19 patients) weaned off all ventilatory support and 13% (7 patients) required nocturnal support. Successful weaning associated with family member as the primary care giver compared to private nurse alone; RR 2.8 (95% CI 0.5, 16.6). Survivors scored a mean score of 48.2 ± 27.3 on the EQ-Visual Analogue Scale. Mean scores on EQ-5D were; Mobility 2 ± 0.82, Self-care 2 ± 0.82, Usual activities 1.86 ± 0.69, Pain 1.43 ± 0.79, Depression 1.29 ± 0.76.

**Conclusion:** In selected patients, home ventilation is a viable option with expectation of successful weaning. Patients on home ventilation report reasonable quality of life with problems related to independence compared to overall well being.

**Keywords:** Critical illness, chronic respiratory failure, ventilator dependant, home ventilation.

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**A CASE OF CONSTRICTIVE PERICARDITIS PRESENTING AS CHYLOTHORAX**

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Chylothorax is a rare clinical condition, attributed to a damaged thoracic duct due to either malignant diseases or trauma (Cardiothoracic Surgery). It is characterized by aspiration of milky white fluid from the pleural cavity. Here we present the case of a 15-year-old boy with chylothorax whose cause of effusion was identified as constrictive pericarditis.

The definitive treatment of chylothorax involves the identification and management of underlying pathology. It is suggested by aspiration of milky white pleural fluid, in an immune-competent patient on normal diet; the aspirate will show a triglyceride level >1.2 mmol/l (110 mg/dl), along with immunoglobulins, and between 400 and 6800 white blood cells/ml with lymphocytic predominance. Chylothorax is usually attributed to either malignant diseases or trauma (Cardiothoracic Surgery). Other reported causes include thrombosis of the superior vena cava or subclavian veins, pulmonary lymphangiomyomatosis, filariasis, Kaposi sarcoma in acquired immunodeficiency syndrome (AIDS), heart failure, amyloidosis, sarcoidosis, Behcet’s syndrome and constrictive pericarditis. It is also reported as an infrequent complication of TB in both adults and children.

Clinical features of chylothorax depend on the rate of development of the effusion; rapid effusion is associated with hypovolaemia, and difficulty in breathing. Large volumes are also associated with immunosuppression as immunoglobulins and lymphocytes are lost in the chyle, leading to opportunistic infections.

Here we present the case of a 15-year-old boy, with treated pleural and pericardial tuberculosis (TB) leading to constrictive pericarditis and chylothorax. The authors of the study recommend that when dealing with a case of chylothorax, constrictive pericarditis should be kept among the differentials.

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**CAUSES OF SMOKING IN PAKISTAN: AN ANALYSIS OF SOCIAL FACTORS**

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**Objective:** To determine the factors contributing to the initiation and propagation of smoking in visitors to a major tertiary health center in Karachi, Pakistan.

**Methods:** Seven major contributing factors to the initiation and propagation of smoking were presented to consenting study participants (n=170) in a questionnaire. Participants were then requested to use their experience and opinion to rate each of the given factors on a scale of 1 to 5 regarding its importance as a causative factor in the initiation and propagation of smoking. Results were analyzed using SPSSv16.0.

**Results:** Preliminary analysis revealed occupational stress relief as the most important factor contributing to smoking with a mean score of 3.25 ± 1.32. Peer pressure ranked second (Score 3.20 ± 1.42). Domestic stress relief ranked third with a score of 3.19 ± 1.32. Smokers gave lower rating than non-smokers to most factors. Younger participants gave higher ratings to peer pressure, and most participants were found to have begun smoking at a young age.

**Conclusions:** Even though the addictive power of nicotine or stress may appear as a factor in middle-aged smokers, the root of their habit lies in the initiation due to peer pressure.

**Keywords:** Smoking, Stress relief, Peer pressure, Nicotine addiction

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**THE EFFICACY OF SPIROMETRY AS A SCREENING TOOL IN DETECTION OF AIR FLOW OBSTRUCTION**

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**Background/Objectives:** In developing countries, spirometry has not been considered a part of routine medical check-up. The purpose of the study was to establish the usefulness of spirometry as a primary screening tool in detecting air flow obstruction (AFO) during routine medical check-up (RMC).

**Methods:** This was a hospital-based, retrospective, non-randomized case series study of 3696 participants, who presented to hospital for routine medical check-up. All subjects were assisted at the Pulmonary Medicine Department, from January 2003 till December 2008 who, having met other inclusion criteria, underwent spirometry. Data were analyzed using proportion, group means, standard deviations and Pearson Chi Square test.
**Results:** The overall yield from spirometry in detecting AFO was 211 patients (5.7%); 174 males (6.1%) and 37 females (4.4%) \((P=0.158, \text{ Pearson Chi Square test})\). Greater age at presentation and BMI correlated significantly with AFO in the target group \((P=<0.001; P=<0.005)\) respectively. Dyspnoea was the most frequent symptomatology observed in those diagnosed with AFO.

**Conclusion:** These results suggest that spirometry during RMC for all persons can detect a significant number of patients with AFO particularly among the middle and older age groups with a low BMI.

**Keywords:** Spirometry, airflow obstruction, routine medical check-up, early screening, epidemiology.

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**SURVIVAL DATA AND PROGNOSTIC FACTORS SEEN IN PAKISTANI PATIENTS WITH LUNG CANCER**

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Lung cancer is one of the leading causes of cancer-related deaths in Pakistan. There is dearth of local data on survival and prognostic factors.

**Method:** We did a retrospective review 189 cases (histopathologically confirmed) seen at the Aga Khan University Hospital, Karachi.

**Results:** Mean age +/- SD was 60.7 +/- 11 years. 156 (82%) were men. 156 (83%) were current or ex-smokers. Commonest comorbid was hypertension in 59 (31%) and Diabetes in 47 (25%). Cough and weight loss were the most frequent symptoms in 150 (79%) and 121 (64%) cases respectively. Anemia in 49 (26%) and cachexia in 13 (7%) were the commonest detected signs. CXR showed a central mass in 96 (51%) and a pleural effusion in 70 (37%). 148 (78%) underwent bronchoscopy. There were 36 (19%) cases of small cell carcinoma and 155 cases of non-small cell carcinoma (Squamous 43%, adenocarcinoma 18%, large cell or undifferentiated 19%). ECOG functional status was 2 and 3 in 72 (38%) and 53 (28%) cases respectively. 66 (35%) received chemotherapy, 36 (19%) radiation therapy and 43 (23%) underwent surgery. Survival data were available in 83 cases. The overall median survival was 8 months (range 0.96-84); with 24 patients surviving \(\geq 1\) year, 10 \(\geq 2\) years and 1 patient \(>5\) years.

**Conclusions:** Mostly men who are either current or ex-smokers are affected. Distribution of cell type and location are similar in Pakistan to other developed countries. The overall median survival remains poor despite a significantly large proportion undergoing accepted standards of treatment.

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**“ALL THAT WHEEZES IS NOT ASTHMA”**

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*Introduction:* "All that wheezes is not asthma” this adage accredited to Chevalier Jackson emphasizes the importance of differentiating asthma from its mimics, particularly if the patient is not responding to usual therapy. We present a case of bronchospasm which eventually found to have oesophageal achalasia.

**Case Report:** 51 year old lady presented with complains of cough for 15 days, fever for 5 days and worsening shortness of breath for the last 3 days. Her cough worsened after taking meals and on lying down as well, her fever is associated with chills and his high grade and her shortness of breath was aggravated by lying down as well as on exertion. Prior to coming to hospital she had been treated for his cough and shortness of breath with the diagnosis of Asthma but she didn’t responded. She had a history of recurrent cough for the last 1-2 month associated with shortness of breath. She had been diagnosed as a case of hypertyroidism and was treated with Carbamizole for last three weeks, she also had been treated as GERD and H-pyliori induced gastritis.

At presentation she was in respiratory distress with respiratory rate of 28/ minute. Her chest examination revealed severe bilateral poly-phonc ronchii along with crackles at bases. She was not hypoxic and her Chest X-ray was normal. She was admitted with a working diagnosis of infective exacerbation of Asthma and was initially started on intravenous steroids, nebulizers and antibiotics. The next morning she was better symptomatically and her chest auscultatory findings improved but there was a stridor present after exertion. In view of high clinical suspicion her CT scan Neck and Chest was done which revealed dilated cervical and thoracic oesophagus, causing compression.
and anterior displacement of the trachea (Figure 1) Her barium Swallow was done which confirmed the diagnosis of Oesophageal Achalasia (Figure: 2) Endoscopic balloon dilatation was preformed and she was then discharged home.

**Conclusion:** Physician should protract a high index of suspicion for diseases that mimic asthma, particularly when the patient fails to respond the therapy.

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**PREVALENCE AND PREDICTORS OF SMOKING AND SMOKELESS TOBACCO AMONG WOMEN IN KARACHI, PAKISTAN**

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**Objective:** To determine the prevalence and predictors of smoking and smokeless tobacco use amongst women in Karachi, Pakistan

**Methods:** Cross sectional study. The study was carried out at The Aga Khan University Hospital Karachi and Jinnah Medical Complex Karachi, during Sep 2009- Dec 2010. A Convenient sample of 485 female attendants aged 15-80 was taken for the study. A standard questionnaire was used to assess the prevalence and predictors of tobacco use amongst participants. The exclusion criterion was mental/psychological illness.

**Results:** Ninety-six (19.6%) participants admitted to using tobacco in one form or another 13 (2.7%) participants were found to be smokers and 83 (17.1%) participants were smokeless tobacco users. Tobacco use was found to be directly related to illiteracy, marriage, increasing age and working status of the participants. 6.8% of the participants were of the view that tobacco didn’t cause any harm at all.

**Conclusion:** In spite the cultural taboo, the prevalence of tobacco use and smoking is at a rise in our female population. Education was found to be the strongest protective factor against tobacco. Different preventive strategies may be required to target this issue. Prospective epidemiological studies in different parts of the country may be helpful in assessing this serious public health issue of Pakistan.
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