Identification And Molecular Characterization of Mycobacterium Respiratory Disease In Human Body From Rewa Division

Sunaina Chaudhari[1], Dr. Santosh Agnihotri[2]
[1, 2] Aps University Rewa (M.P.)

Abstract- *Tuberculosis (TB), one of the oldest known human diseases. Is still is one of the major causes of mortality, since two million people die each year from this malady. TB has many manifestations, affecting bone, the central nervous system, and many other organ systems, but it is primarily a pulmonary disease that is initiated by the deposition of Mycobacterium tuberculosis, contained in aerosol droplets, onto lung alveolar surfaces. From this point, the progression of the disease can have several outcomes, determined largely by the response of the host immune system. The efficacy of this response is affected by intrinsic factors such as the genetics of the immune system as well as extrinsic factors, e.g., insults to the immune system and the nutritional and physiological state of the host. In addition, the pathogen may play a role in disease progression since some M. tuberculosis strains are reportedly more virulent than others, as defined by increased transmissibility as well as being associated with higher morbidity and mortality in infected individuals. Despite the widespread use of an attenuated live vaccine and several antibiotics, there is more TB than ever before, requiring new vaccines and drugs and more specific and rapid diagnostics. Researchers are utilizing information obtained from the complete sequence of the M. tuberculosis genome and from new genetic and physiological methods to identify targets in M. tuberculosis that will aid in the development of these sorely needed anti tubercular agents.*

Keywords- Delivery of are, epidemiology, history, medical& surgical advances.

I. INTRODUCTION

Children are the greatest inspiration of the present and our great hope forthe future. Children are the pride of a nation. It is the duty of every adult citizen tokeep up this unit of pride safe for the progress of the country .Today's society iscomplex and ever changing. Children grow and learn not only to cope with current Demands but also to prepare themselves to face many unexpected events that they Will come across in their future. Adults serve as advocates for children in orderTo protect them from facing various crises in their life, especially during the earlyYears of their life's journey. Unfortunately illness and hospitalization are the major hitch and hindrance children face frequently.

Asthma is one of the chronic respiratory conditions that cause swelling. And narrowing of the bronchial tubes through which air passes in and out of the Lungs. The most recent National Heart Lung and Blood Institute (NHLBI) expert Panel guidelines on the diagnosis and management of asthma defines asthma as a Common chronic disorder of the airways that is complex and characterized by variable and recurring symptoms, airflow obstruction, bronchial hyper responsiveness and underlying inflammation. The interaction of these features of

Asthma determines the clinical manifestations, disease severity and response to treatment. Exacerbations of asthma are episodes of progressive increase in shortness.Of breath, cough, wheezing or chest tightness.

Tuberculosis

Although not stated in formal terms, the goal of the TB program is to "prevent and reduce occupationally related TB within the context of the broader CDC [Centers for Disease Control and Prevention] response to eliminate TB in the U.S." and follows the strategic plan for TB set out, updated, and implemented by the CDC (MMWR 1989a, 1992). In addition to other CDC guidance documents (CDC 2002; MMWR 2005, 2006b), a 2001 report of the Institute of Medicine has served to provide program objectives (IOM 2001). Taken together, these sources provide an extensive body of guidance for the NIOSH TB program. To a large extent, these strategic goals appear to be driven largely, and appropriately, toward national priorities that were established through the CDC.

II. OBJECTIVES

1. To compare the pre- test and post-test level of lung function and anxiety among the asthmatic children between study group and control group.
2. To determine the effectiveness of massage therapy on lung function and anxiety among the asthmatic children in study group.
3. To correlate the pre-test and post-test level of lung function and anxiety among the asthmatic children in study group and control group.
4. To associate the mean difference scores of lung function and anxiety of the asthmatic children with their demographic and clinical variables in study group and control group.
5. To estimate the proportion of adults receiving care for asthma, AR, (Asthma Range) COPD,(Chronic Obstructive Pulmonary Disease) and rhino sinusitis and assess the economic burden, both direct and indirect of these chronic respiratory disease.

III. MATERIALS ANDMETHODS

3.1 ASTHMA

Asthma is a predisposition to chronic inflammation of the lungs in which theairways bronchi are reversibly narrowed. Asthma is a serious public healthproblem throughout the world, affecting people of all ages. When uncontrolled,Asthma can place severe limits on daily life, and is sometimes fatal.

There are two broad types of Asthma: allergic and idiosyncratic. Allergic Asthma is often associated with a personal and /or family history of allergic disease such as rhinitis urticarial, and eczema, with positive wheal-and flares skin reactions to intradermal injection of extracts of airborne antigens, with increased level of IgE, And therefore has disease that cannot be classified on the basis of defined Immunologic mechanisms. Many patients develop a typical system complex on Contracting an upper respiratory illness. The initial symptoms may be little more than a common cold, but after several days the patient begins to develop paroxysms of wheezing and dyspnea that can last for days to months. Many patients have a disease that does not fit clearly into either of the preceding categories but instead falls into a mix group with features of each. In general, bronchial Asthma that has its onset in early life tends to have strong allergic components, whereas Asthma that develops late tends to be non-allergic or to have a mixed etiology. During Asthma attacks (exacerbations of Asthma), the smooth muscle cells in the bronchi constrict, and the airways become inflamed and swollen. Breathing becomes difficult, and Asthma causes 4,000 deaths a year in the U.S.

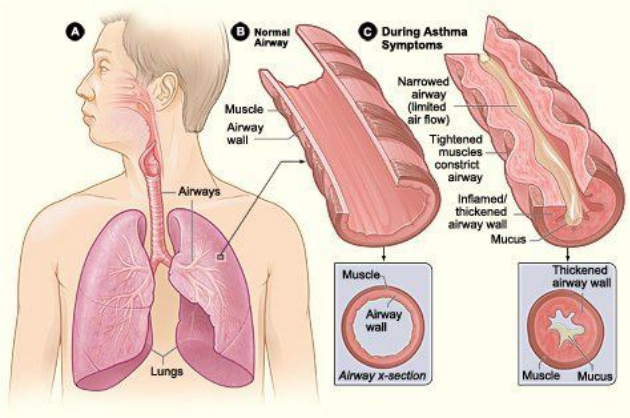

Figure 2.1 (A) Location of airways & lungs (B) normal airway(C) airway duringAsthma.

3.2 Asthma Severity

Based on the severity, Asthma can be subdivided on the level of symptoms, airflow limitation and lung function variability into four categories: Intermittent, Mild Persistent, Moderate Persistent, or Severe Persistent. Classification of Asthma by Severity is useful when decisions are being made about management at the initial

Assessment of a patient. It is important to recognize, however, that Asthma severity involves both the severity of the underlying disease and its responsiveness to treatment. Thus, Asthma can present with severe symptoms and airflow obstruction and be classified as Severe Persistent on initial presentation (Table 2.1), but respond fully to treatment and then be classified as Moderate Persistent Asthma. In addition, severity is not an unvarying feature of individual patients' Asthma, but may change over months or years.

Classification of Asthma severity				
Severity	Symptom frequency	Nighttime symptoms	Peak expiratory flow rate or FEV1 of predicted	Variability of peak expiratory flow rate or FEV1
Intermittent	< once a week	≤ twice per Month	≥ 80% predicted	< 20%
Mild persistent	> once per week but < once per day	> twice per month	≥ 80% predicted	20–30%
Moderate persistent	Daily	> once per week	60–80% predicted	> 30%
Severe persistent	Daily	Frequent	< 60% predicted	> 30%

Table 3.1: Classification of Asthma severity with different parameters
(As per GINA Report, 2009)

IV. DISCUSSION

Erwin and Gelfand (2008) surveyed the impact of Asthma on the patient, the family and society in relation to Well-Being of the diseased. The objective was mainly to study the impact of Asthma on the patient, the family & society and considers the role of primary care providers and pediatricians in reducing the burden of Asthma. Nearly 8% of the US population suffers from Asthma. The most recent Government data show that Asthma attack prevalence, defined as the proportion of individuals with at least 1 Asthma episode in a 12-month period, was 4.2%. Results show that consistent with its chronicity and its manifestations, including pulmonary function impairment and symptoms of wheezing, cough, dyspnea, and chest tightness, Asthma impairs patients' Well-Being and can significantly interfere with the ability to undertake normal daily activities. Among those with at least 1 Asthma attack in the previous year in the 2002 National Health Interview Survey (NHIS), Asthma was responsible for 14.7 million missed school days in children 5 to 17 years old and 11.8 million missed workdays in adults 18 years and older. In keeping with the high prevalence and life impact of Asthma, Asthma-associated healthcare resource use is substantial. In 2002, Asthma was responsible for 13.9 million outpatient visits, 1.9 million emergency department visits, and 484 000 hospitalizations in the United States. The annual economic cost of Asthma in the United States is estimated at $14 billion. It concludes that children are disproportionately affected by Asthma and have higher rates of Asthma-associated healthcare use and greater Asthma related activity limitation than adults. These data reflect a growing burden of Asthma in terms of morbidity, quality of life, and healthcare costs and demonstrate that Asthma care is falling short of National Heart, Lung, and Blood Institute (NHLBI) goals. Primary care providers, including pediatricians, play a pivotal role in improving quality of care for Asthma given that most cases of Asthma are diagnosed and managed in the primary care setting.

4.1 Mechanism of Airway Hyper Responsiveness

- **Excessive contraction of airway smooth muscle** may result from increased volume and/or contractility of airway smooth muscle cells. **Uncoupling** of airway contraction as a result of inflammatory changes in the airway may lead to excessive narrowing of the airways and a loss of the maximum plateau of contraction found in normal airway when bronchoconstriction substances are Inhaled.

- **Thickening of the airway wall** by edema and structural changes amplifies airway narrowing due to contraction of airway smooth muscle for geometric reasons.
- **Sensory nerves** may be sensitized by inflammation, leading to exaggerated bronchoconstriction in response to sensory stimuli.

4.1 Cause of Asthma

Asthma is caused by environmental and genetic factors, which can influence how severe Asthma is and how well it responds to medication.

4.2 Environmental

Many environmental risk factors have been associated with Asthma development and morbidity in children, but a few stands out as well-replicated or that has a meta-analysis of several studies to support their direct association.Environmental tobacco smoke, especially maternal cigarette smoking, is associatedwith high risk of Asthma prevalence and Asthma morbidity, wheeze, and respiratoryinfections. Low air quality, from traffic pollution or high ozone levels, has beenrepeatedly associated with increased Asthma morbidity and has a suggestedassociation with Asthma development.

V. RESULTS

Environmental Survey

5.1 Time-integrated sampling

A total of 85 personal respirable dust samples were collected from 54 workers. Twelve of those samples measured task-specific partial shift concentrations. Two area samples were collected in the office. Eight of the personal samples were voided because flock had overloaded the cyclone sampling device. Three samples did not measure levels above the minimum detectable concentration (MDC) of 0.01 mg/m3, and those samples were assigned a value of half the MDC for calculation purposes.

VI. SUMMARY AND CONCLUSION

In light of the projected burden of COPD indeveloping countries, programmes to prevent tobacco smoking are urgently needed. Government commitment is fundamental and may be increased by signing the Framework Convention for Tobacco Control. Each country must also consider whether to implement standardized management programmes for asthma and/or COPD, based on national priorities. International agencies could assist by defining

essential drugs and equipment, and encouraging the use of generics. Inhaled beclomethasone 250 mg, for example, has been added to the essential drugs list recommended by WHO. There is also a need to identify producers of high-quality generic drugs, to enable international tenders to be effectively applied. National governments should add these medications to their essential drugs list and include them in their procurement procedures. If adequate asthma drugs were made available in developing countries for about US$ 20 per patient for one year's treatment, these Would be affordable for the majority of patients.

Other measures include adapting guidelines to the local context and distributing them; upgrading equipment at district level; purchasing high-quality drugs at low prices; routine training and supervision of health services personnel; and permanently evaluating performance using clear indicators. Mobilization of professional societies, nongovernmental organizations, and the media will also increase government commitment to controlling tobacco use and implementing standardized case management.

REFFERENCE

[1] **Lopez AD.** Causes of death in industrial and developingcountries: estimates for 1985–1990. In: Jamison DT et al., eds. Disease control priorities in developing countries. Washington, DC, Oxford Medical Publications, 1993: 35–50.

[2] **Colley JRT, Reid DD**. Urban and social origins of childhood bronchitis in England and Wales. British Medical Journal, 1970, 2: 213–217.

[3] **Prescott E, Lange P, Vestbo J.**Socioeconomic status, lung function and admission to hospital for COPD: results from the Copenhagen City Heart Study. European Respiratory Journal, 1999, 13 (5): 1019–1014.

[4] **Chaulet P.** After health sector reform, whither lung health. International Journal of Tuberculosis Lung Disease, 1998, 2 (S): 349–359.

[5] **Murray CJL, Lopez AD, eds.**The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020. Cambridge, MA, Harvard University Press, 1996.

[6] **Murray CJL, Lopez AD.** Evidence-based health policy-lessons from the global burden of disease study. Sciences, 1996, 274: 740–743.

[7] **Xian Sheng Chen et al.** Analysis of basic data of the study on prevention and treatment of COPD. Chinese Journal of Tuberculosis Respiratory Disease, 1998, 21 (12): 749–752 (English abstract available).

[8] **Burchfiel CM et al.** Effects of smoking and smoking cessation on longitudinal decline in pulmonary function. American Journal of Respiratory Critical Care Medicine, 1995, 151: 1778–1785.

[9] **Kerstjens HAM et al.** Decline of FEV1 by age and smoking status: facts, figures and fallacies. Thorax, 1997, 52: 820–827.

[10] **Gross NJ.** The Lung Health Study. Disappointment and triumph. Editorial. Journal of the American Medical Association 1994, 272: 1539–1541.

[11] **Antao, V., and C. Piacitelli.** 2004. Health Hazard Evaluation Report: Claremont Flock Corporation, Leominster, Massachusetts. HETA-2004-0186-3011. U.S. Department of Health and Human Services, Centers for Disease Control, National Institute for Occupation Safety and Health, Cincinnati, OH: [online]. Available: http://www.cdc.gov/niosh /hhe/reports/pdfs/2004-0186-3011.pdf [accessed Aug. 15, 2007].