

COMMENTARY

Spectrum of Respiratory Diseases in the Middle East

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Introduction

The wealth of respiratory pathologies in the Middle-East is as diversified as civilizations and cultures of this part of the world. A group of internists and respiratory medicine physicians have recently examined the published literature and clinical practice of pulmonary medicine in this part of the world. Their work resulted in a comprehensive review published in *Respirology* (1). In view of the importance to the general clinical practice even outside respiratory medicine, the editorial board of *Ibnosina Journal of Medicine and Biomedical Sciences* invited the authors to write this commentary to spread further the message about this important issue. We will comment concisely on the published article following its order of contents. For practical purposes, respiratory disorders may be grouped in six major categories (Table 1). Genetic and idiopathic lung conditions:

A high rate of consanguinity is found in the Middle East. Conditions such as sickle cell disease, Behcet's disease, alpha-1 antitrypsin deficiency, cystic fibrosis (CF) and ciliary dyskinesia are found with documented pulmonary complications such as bronchiectasis, restrictive lung disease or pulmonary hypertension. Sarcoidosis and idiopathic pulmonary fibrosis are also present.

Pulmonary infections

It is thought that *Mycobacterium tuberculosis* evolved from *Mycobacterium bovis* 5,000 years B.C. at the Nile Valley during cattle domestication process (2). Since then, mycobacterial infections have a firm foothold in this region. Moreover, resistant pulmonary tuberculosis is apparently on the rise because of particular factors found here namely: human migrations, religious trips (Hajj) and medical

Table 1. Major Classes of Respiratory Pathology Seen in the Middle East.

Genetic and idiopathic lung conditions

Pulmonary infections

Environmental cause

Lung cancers

Pleural diseases

Miscellaneous causes

non-compliance. Non-tuberculous mycobacterial lung infections, such as *M. kansasii* and *M. abscessus*, are occasionally observed especially in immunocompromised or patients with CF. Typical and atypical pneumonia both of community or hospital acquired forms are prevalent. Ventilator-associated pneumonia (VAP) is also well-recognized. Viral pneumonitis are common in the Mideast with agents such as Parainfluenza, Respiratory Syncytial Virus, and Influenza-A leading the pack. Avian influenza and swine influenza (H1N1 influenza virus) had recent mild impact while the Human Immunodeficiency Virus (HIV) has relatively low prevalence in the Middle East. Pulmonary fungal infections can be devastating in immunocompromised individuals. Examples include aspergillosis, histoplasmosis, zygomycosis, and even coccidioidomycosis. Peculiar parasitic infestations have been observed to cause a multitude of respiratory pathologies in this region. These include: hydatid cyst disease, schistosomiasis, ascariasis, and laryngeal leishmaniasis.

Environmental causes

Many factors contribute to worsening pulmonary health, especially in patients with asthma and chronic obstructive lung disease (3). These include: climate, tobacco consumption, occupational exposure and activities related to wars. Weather in the Mid-East can vary from very cold to extremely hot with well-known dusty winds. Tobacco abuse is a veritable epidemic in this region. It is on the rise especially among the youth and women with “fashionable” ways of using it namely

pipes and “hubbly-bubbly”. The tradition of incense burning (bakhour) and industrial fumes contribute further to air pollution. Occupational exposure to certain agents can cause conditions such as: byssinosis, psittacosis, Q-fever pneumonia, silicosis, berylliosis, radon gas exposure, or lignite inhalation. The Middle-East has seen its share of destructive wars using many pulmonary-nocive agents. Mustard gas can cause bronchiolitis and progressive pulmonary interstitial fibrosis. The “Persian Gulf Syndrome” (Desert-storm pneumonitis) is thought to be the result of inhaled fine depleted uranium (DU) dust. It is still unknown if long term exposure will cause lung malignancy in case of DU, however studies done on German uranium miners proved this risk. White phosphorus has been used in Iraq and Gaza recently, the United States Agency for Toxic Substances and Disease Registry reports that it can cause severe burns, cough, lung irritation, and in the long term necrosis of the jaw.

Lung cancers

Lung cancer is considered one of the most common types of malignancies in the Middle East. Adenocarcinoma and squamous cell carcinoma are most common (4). Both mesothelioma and lymphoma are well reported in the area. Secondary deposits in the lung from different primary tumors of other organs are described.

Pleural Diseases

Literature review suggests that pneumothoraces are commonly traumatic in aetiology (5). When secondary

spontaneous pneumothorax occurs, is it commonly caused by underlying emphysema. Pleural effusions encountered in the Middle East are commonly due to tuberculosis (6). However, malignant pleural effusions, from primary lung malignancy or representing metastases are noted to be on the rise.

Miscellaneous

These include a collection of unrelated conditions such as:

- a. Bronchiectasis: the most common etiology in this area is previous chest infection like tuberculosis. Other causes, such as cystic fibrosis, are also reported.
- b. Obstructive sleep apnea (OSA): limited reports from the Middle East indicate that OSA is a common problem especially in countries with increased rate of obesity (7). There seems to be a decreased level of patients' awareness when it comes to the disease and inadequate number of physicians specialized in the management of his disorder.
- c. Foreign body aspiration: usually occurs in children, with cough, shortness of breath, and stridor being the presenting complaints. There are increasing reports of women aspirating pins used to secure headscarves (8). The reported complications of retained foreign body include persistent pneumonia, formation of lung abscess, and bronchiectasis.

Final Remarks

Respiratory pathology in the Middle-East is extremely diversified and proven by current medical literature. There is, however, a less-documented worsening trend of many respiratory entities caused by factors such as burgeoning tobacco abuse and increasing air pollution. Clear research, educational, and legislative deficiencies must be identified and corrected in order to witness an improvement in the quality of respiratory health in this part of the world. Appraisal of what we know already about clinical practice and research is an important starting step and hence we very much commend the new comprehensive review (1) and we suggest perhaps it is time that other disciplines follow suit.

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