Executive summary of the multicenter survey on the prevalence and risk factors of chronic respiratory diseases in patients presenting to primary care centers and emergency rooms in Syria

Yousser Mohammad[1], Rafea Shaaban[1,2], Fatmeh Yassine[1], Jamal Allouch[3], Nasser Daaboul[3], Abou Al-Zahab Bassam[3], Al-bittar Mohammad[3], Daed Taha[4], Samir Sabba[3], Ghayath Dyban[1], Kinaz Al-Sheih[3], Hussam Balleh[1], Moustafa Ibrahim[1], Hala Al Khaer[3], Mazen Dayoub[5], Ramsa Halloum[5], Ibtihal Fadhil[6], Abdul Fattah Abbas[1], Abdullah Khouri[4], Nikolai Khaltaev[7], Jean Bousquet[7,8], Mais Khaddouj[5], Ibrahim Suleiman[1], Moueef Meri[1], Mahmoud Bakir[9], Annas Naem[10], Husein Said[1], Fatmeh Al-Dmeirawi[9], Husein Mayhoub[1], Gazal Dib[1]

[1]Tishreen university, WHO-EMRO collaborating center for CRD, Lattakia, Syria; [2]Unit 700 Epidemiology, National Institute of Health and Medical Research (INSERM), Paris, France; [3]Ministry of Health, Damascus, Syria; [4]University of Aleppo, Aleppo, Syria; [5]Hopital Al-Assad, Lattakia, Syria; [6]NCDnet (Global Noncommunicable Disease Network), WHO-EMRO (Eastern Mediterranean Region), Geneva, Switzerland; [7]Global Alliance against Chronic Respiratory Diseases (GARD), WHO, Geneva, Switzerland; [8]WHO collaborating center for asthma and Rhinitis, Montpellier, France; [9]University of Damascus, Damascus, Syria; [10]University of Homs, Homs, Syria

J Thorac Dis 2012;4(2):203-205. DOI: 10.3978/j.issn.2072-1439.2011.11.07

In 2009-2010, Tishreen University and the Health Ministry conducted a multi-center Survey on the Prevalence and risk factors of chronic respiratory diseases (CRD) and co-morbidities in patients presenting to primary care centers, general outpatients clinics and Emergency rooms in hospitals. In collaboration with WHO-Global alliance against chronic respiratory diseases (GARD), www.who.int/gard, the protocol of this survey has been established tested and validated by the WHO-GARD experts (1). This survey is the first multi-center survey on CRD in primary care in the Eastern Mediterranean Region. The strongest point is the use of lung function measurement for diagnosis of CRD (2).

Research question

Primary care centers should play a big role in CRD management, because they are widespread in the most remote regions through the Syrian Arab Republic, and they are the sites for WHO programs (3,4). Primary care plays a critical role in health system in Europe and USA (2,5,6). In developing countries, some patients present to Emergency rooms for acute exacerbation of their CRD, neglecting their long-term treatment and follow up, for this reason we included ER in our survey (7).

Taking this in consideration, we wanted to investigate the following questions, to provide a tool for evidence bases health strategy for CRD: track the prevalence of CRD and co-morbid chronic diseases (hypertension, cardiac diseases, diabetes, and cancer) in patients presenting to primary care centers and ER; determine risk factors; evaluate the knowledge of primary care doctors in CRD diagnosis and management.

Objectives

Improve teaching and training curriculum in Universities, through a new approach on long term management of CRD and co- morbidities, taking in consideration risk factors, follow up, and patient education.

Improve Ministry of Health (MOH) programs on CRD and co- morbid chronic diseases, by evidence-based strategies, in elaborating training, Educational materials, and leaflets. Also for prevention strategies.

Methods

Patients six years and older, presenting to primary care health centers of MOH and ministry of Education were surveyed. Patients presenting to Emergency rooms and Outpatients General Clinics in hospitals of MOH, higher education, Military Health

No potential conflict of interest.

Corresponding to: Yousser Mohammad, MD. Tishreen University POB 1479, Lattakia Syria. Tel: +96-3414-22200; Fax: +96-3414-22200. Email: Mohamyou@scs-net.org, yousser.mohammad@yahoo.com.

Submitted Nov 10, 2011. Accepted for publication Nov 17, 2011.
Available at www.jthoracdis.com

ISSN: 2072-1439

were also surveyed. Data analysis by SPSS has been done. Results were presented in tables. Association between chronic respiratory symptoms, diseases, risk factors and FEV_1<80% predicted, or FEV_1/FVC<70% is considered as significant if P<0.05.

Strong argument for the validity of our study is that the protocol has been tested in other countries and results published (1). Another strong point is that we did spirometry to measure the true prevalence of obstruction and asthma (2,4,6,8). Well trained GPs or nurses performed spirometry (8). None of our patients had spirometry done before.

Results

We surveyed 22 centers in Lattakia, Tartous, Damascus, Aleppo, Homs, Hama. 1,599 patients in total, 51% are women. Median age for women (30.87±17.84), and for men (32.08±20.37). Age categories are: 37.7% (6-20) years, 34.13% (20-44) years old, 18.17%>44 years. 73.3% in dispensaries, 19% in emergency rooms and 7.45% in outpatient clinics. 30% are unemployed, 30% are illiterates, 23% have dusty job. Obesity with BMI >30 in 14%, 17.5% in women. Smoking cigarettes in 23.24%, it goes to 47.42% in patients >44 years. Men smokers in 34.24%, women in 13.4%. Narguile smokers in 11.11%, 9.42% for in women. Of notice is that 4.7% of 6-20 years old smoke Narguile. So we should emphasize on these public health priorities, especially in youth and women.

Respiratory symptoms reported by patients: 35.5% have respiratory complaint. Chronic cough in 36.8%, chronic sputum 31.68 %, dyspnea in 14.75%.

Lung functions

- FEV_1<80% predicted in 36.23%.
- Reversibility in 27.88% as seen in asthma.
- FEV_1/FVC<70% in 16.67% confirming COPD. It is 15% in women, while Doctor in the primary care center reported 3.39% COPD. This point to the burden of COPD in primary care, and to the lack of knowledge and the need of training doctors in health centers, hospitals and ER.
- Mean FEV_1, which is the marker of severity of COPD correlates with age (2), it is 70.77% in patients >44 years old. This highlights the burden of COPD.

Asthma in 13.12%, but wheezing in 31% (9,10) and reversibility in 27% (6), this point to the under-diagnosis of asthma, and the need for training.

As for *co-morbidities:* hypertension in 9.6%, diabetes in 7.8%, cardiac ischemia in 3.88%, cardiac failure in 2.61%, allergic rhinitis in 5.64%, Cancer in 1.4%, Tuberculosis in2.75%.

Risk factors associated with abnormal FEV_1 (FEV_1<80% predicted): active and passive smoking, illiteracy, body mass index, P=0.0001. It is important to stress on the impact of passive smoking of both cigarette and Narguile on FEV_1 reduction.

FEV_1/FVC<70% in 29% of illiterate, in 22% of patients presenting to ER, but only in 12% of patients presenting to primary health care centers.

Respiratory symptoms are associated with FEV_1<80%, P=0.001.

Hypertension, heart failure and diabetes are associated with FEV_1<80%, P=0.0001.

General practitioner diagnosis, after reviewing the form and lung function results (GPs Form):

- Asthma is diagnosed in 13%, while 24% of not diagnosed as asthmatics reported to have wheezing ever, the same for reversibility, which points to the under diagnosis.
- Another important issue is 56% of asthma patients have FEV_1 <80% at baseline, 25% of asthma patients have FEV_1/FVC <70% after bronchdilators, which points to poor control and inadequate treatment.
- There is association between diagnosed asthma, dusty jobs, smoking, FEV_1, and symptoms: P=0.0001.
- If we consider current prescription for asthma: Inhaled corticosteroids (ICS), which are the gold standard for long term treatment are more prescribed for asthma patients P=0.001 but still under prescribed, although available on the market, listed as WHO essential drug, and included in WHO programs. Oral corticosteroids (OCS) are over prescribed 46%, which could be avoided if, ICS prescribed more often. There is over prescription of antibiotics in 59%. All those highlights the need for training for GPs and students.
- For COPD: Smoking, degree of education, obesity, and age are risk factors for COPD. P=0.001. ICS are over prescribed in 84%, while no need for it and very costly, OCS in 64.29% exposing the patient to undesirable effects. We need to improve knowledge about COPD in primary care and ER.

Recommendations

CRD are public health priority (11,12), our recommendations are evidence based. Our results showed that in 35.49% patients presenting to primary care centers and ER have chronic respiratory problem. We trained health care workers in PHC and ER how to perform correct lung function measurement (expire forcibly, the most deeply, and all air in the lungs), and how to do reversibility test.

Our results seems coherent, proof is the association of FEV_1 <80% with age, smoking P=0.0001, this points to the accuracy in filling in the questionnaire and in performing lung functions (we discarded 200 non conform lung functions).

Accordingly our recommendations (considering the WHO-NCD

action plan and GARD action plan) (11,12) are:

- ❖ Training courses in primary health care centers and emergency rooms on: how to perform Spirometry, peak flow and oxymetrie, which is the gold standard for COPD diagnosis. And on how to evaluate asthma control, and confirm its diagnosis by reversibility test.
- ❖ Need for training materials and modules to be elaborated on the essential to know on CRD according to evidence based needs, for primary care and ER, to be used for CME.
- ❖ Consider co-morbidities: hypertension, ischemic heart diseases, and hear failure, diabetes and cancer. Sharing the same risk factors (eg: smoking), or co-existing and impacting on treatment (eg: diabetes).
- ❖ Widespread awareness and education for CRD in the society.
- ❖ Considering the existence of illiterates, need for photos and video for patients education and community awareness.
- ❖ COPD exists as well in women, we should emphasis in women in our programs.
- ❖ Building on existing national WHO programs: Package of essentials needs for non communicable diseases interventions at primary care (PEN-WHO), and the Practical Approach to Lung Health (PAL), we recommend to refer patients suffering chronic respiratory symptoms of low peak flow rate for spirometry testing in central primary care centers or hospitals.
- ❖ We recommend including outpatients clinics in hospitals in WHO primary care programs.
- ❖ Elaborate guidelines for ER, and to include it in national programs.
- ❖ Strategic partnership between health sectors: MOH, universities, school health and military services, and then cope with medical syndicates and associations and civil societies.
- ❖ Encourage multi-center national surveys for CRD, for evidence based health outcomes (13).
- ❖ Foundation of referral tertiary care clinics for difficult CRD cases.

Include our results in the biannual 2012-2013 WHO plan of WHO at country level.

Cite this article as: Mohammad Y, Shaaban R, Yassine F, Allouch J, Daaboul N, Bassam A, Mohammad A, Taha D, Sabba S, Dyban G, Al-Sheih K, Balleh H, Ibrahim M, Al Khaer H, Dayoub M, Halloum R, Fadhil I, Abbas A, KHouri A, Khaltaev N, Bousquet J, Khaddouj M, Suleiman I, Meri M, Bakir M, Naem A, Said H, Al-Dmeirawi F, Myhoub H, Dib G. Executive summary of the multicenter survey on the prevalence and risk factors of chronic respiratory diseases in patients presenting to primary care centers and emergency rooms in Syria. J Thorac Dis 2012;4(2):203-205. DOI: 10.3978/j.issn.2072-1439.2011.11.07

References

1. World Health Organization [Internet]. Geneva, Switzerland: World Health Organization. c2011. 2008-2013 Action plan for the global strategy for the prevention and control of noncommunicable disease. Available from: http://www.who.int/nmh/publications/9789241597418/en/
2. Alwan A, Ross A, Resnikoff S, Mendis S, Cruz AA, Minelli E, et al. GARD action plan 2008-2013. Geneva, Switzerland: World Health Organization. c2011. [cited 2011 Jun 6]. Available from: http://www.who.int/gard/publications/action_plan/en/index.html
3. Lai CK, Beasley R, Crane J, Foliaki S, Shah J, Weiland S, et al. Global variation in the prevalence and severity of asthma symptoms: phase three of the International Study of Asthma and Allergies in Childhood (ISAAC). Thorax 2009;64:476-83.
4. Mohammad Y, Tabbah K, Mohammad S, Yassine F, Clayton T, Hassan M. International study of asthma and allergies in childhood: phase 3 in the Syrian Arab Republic. East Mediterr Health J 2010;16:710-6.
5. Burney P, Potts J, Aït-Khaled N, Sepulveda RM, Zidouni N, Benali R, et al. A multinational study of treatment failures in asthma management. Int J Tuberc Lung Dis 2008;12:13-8.
6. World Health organization. Practical approach to lung health. Manual on initiating PAL implementation. Geneva, World Health Organization, 2008. (WHO/HTM/TB/2008.410, WHO/NMH/CHP/CPM/08.02).
7. Global initiative for asthma [Internet]. Available from: www.ginasthma.org.
8. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. [cited 2010 May]. Available from: http://www.goldcopd.com/Guidelineitem.asp
9. Pellegrino R, Viegi G, Brusasco V, Crapo RO, Burgos F, Casaburi R, et al. Interpretative strategies for lung function tests. Eur Respir J 2005;26:948-68.
10. Martins P, Rosado-Pinto J, do Céu Teixeira M, Neuparth N, Silva O, Tavares H, et al. Under-report and underdiagnosis of chronic respiratory diseases in an African country. Allergy 2009;64:1061-7.
11. Ulrik CS, Hansen EF, Jensen MS, Rasmussen FV, Dollerup J, Hansen G, et al. Management of COPD in general practice in Denmark--participating in an educational program substantially improves adherence to guidelines. Int J Chron Obstruct Pulmon Dis 2010;5:73-9.
12. Package of essential noncommunicable (PEN) disease interventions for primary health care in low-resource settings. Geneva, Switzerland: World Health Organization. c2010. Available from: http://whqlibdoc.who.int/publications/2010/9789241598996_eng.pdf
13. Bousquet J, Kiley J, Bateman ED, Viegi G, Cruz AA, Khaltaev N, et al. Prioritised research agenda for prevention and control of chronic respiratory diseases. Eur Respir J 2010;36:995-1001.