DIFFICULTIES ENCOUNTERED IN COPD DIAGNOSIS AND TREATMENT

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ТРУДНОСТИ ДИАГНОСТИКИ И ЛЕЧЕНИЯ ХРОНИЧЕСКОЙ ОБСТРУКТИВНОЙ БОЛЕЗНИ ЛЕГКИХ

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Summary. Chronic Obstructive Pulmonary Disease (COPD) is known globally to be a significant cause of mortality and morbidity as well as socioeconomic problems. COPD is a systemic, progressive airflow restriction disesase due to chronic inflammation in the airways following inhalation of cigarette smoke, occupational dusts and biomass in individuals with genetic predisposition. There is infrequent prevalence of alpha-1 antitrypsin deficiency in our country. Hence, in spite of the fact that COPD can easily be avoided with simple measures, a number of problems is still faced in our country and the whole world at large when it comes to diagnosis and treatment.

Key words: chronic obstructive pulmonary disease

Резюме: хроническая обструктивная болезнь легких (ХОБЛ) известна во всем мире, является серьезной причиной смертности и заболеваемости, а также социально-экономических проблем. ХОБЛ - это системное, прогрессивное ограничение потока воздуха из-за хронического воспаления дыхательных путей после вдыхания сигаретного дыма, воздействия профессиональной пыли у лиц с генетической предрасположенностью.

Ключевые слова: хроническая обструктивная болезнь легких.

Chronic Obstructive Pulmonary Disease (COPD) is known globally to be a significant cause of mortality and morbidity as well as socioeconomic problems. COPD is a systemic, progressive airflow restriction disesase due to chronic inflammation in the airways following inhalation of cigarette smoke, occupational dusts and biomass in individuals with genetic predisposition. There is infrequent prevalence of alpha-1 antitrypsin deficiency in our country. Hence, in spite of the fact that COPD can easily be avoided with simple measures, a number of problems is still faced in our country and the whole world at large when it comes to diagnosis and treatment.

Problems encountered in diagnosis. Problems faced in diagnosis can be deliberated in four major headlines namely: COPD related, patient related, physician related and health system related problems. COPD is a very insidious disease. It manifests itself as cough, sputum and breathlessness. Physiopathologic alterations begin prior to the symptoms. As of the time of diagnosis, a part of the respiratory functions is already lost irreversibly. Since majority of these patients are cigarette smokers they tend to normalise and attribute the symptoms to the cigarette hence not applying to the doctor lest he/she advises them to quit smoking. COPD progresses for quite a long time without any symptom therefore making early diagnosis nearly impossible if not coincidentally detected. Since smoking-associated irritative coughing and early morning sputum production is common in all cigarette smokers patients tend to apply to the physician only when dyspnea develops. Meanwhile, even the dypnea so evolved is mostly percieved as fatigue owing to elderly age since it appears with effort or when going up or down a stair.

Patient related difficulties mainly encomprise the fact that majority of the patients are of low socioeconomic status and literacy rate [1]. Genetic variation at the level of peripheric and central receptors as well as perception centre plays a vital role in the perception of breathlessness by patients [2]. Its has been shown in various studies that cigarette addiciton rate is high but very few of smokers deem it a pathological or abnormal conditon [3]. Patients appear to accept cigarette addiction (the biggest rival of to their health) without questioning. Insidious diseases like COPD develop over a long period of time and patients live along with the symptoms. This explains why

very few cigarette addicts applies to the physician. BOLD pilot study conducted in the province o f Adana, here in Turkey revealed only 1 out 10 COPD patients actually get diagnosed [4]. In the United States of America, it was discovered that only 2.4-7 million patients got diagnosed out of the anticipated prevalence of 16 million patients in the year 2000 [5]. Its even more interesting to realise that even dyspnea, being the most important symptiom, could not some of the times form enough reason for the patient to apply to the doctor, until COPD exacerbation brings them to the emergency unit, then the diagnosis is put [6].

Moreover, as would be expected, there is also physician associated shortcomings in the course of diagnosis. Especially with the doctors in the primary health cares units, awareness rates is terribly low. High rate of cigarette smoking among the doctors and other health workers in general, is being observed in Turkey and the world at large [7-9]. Cigarette is without doubt a paramount risk factor in COPD. However, domestic use of organic fuels in the rural areas together with occupational dusts and chemical exposures in the industrialised areas seem overlooked. In most parts of the universe, solid fuels as fire woods, shrubs and animal refuses are being used for the purpose of heating and cooking. People living in houses where these fuels are being used in the absence of sufficent ventilation tend to immensely inhale the smokes right from their childhood. Houses where “biomass” is being used are replete of carbonmonoxide, nitrogen and sulforoxide well above tolerable and acceptable values [10]. Therefore, women and childeren appear to be the most affected from the indoor pollutions. A study was conducted in Kayseri province involving 242 village women who happen to be exposed to the”biomass” and 102 urban women. Without taking cigarette smoking into consideration, it was established that the prevalence of chronic bronchitis and COPD among the village women was 20.7% and 12.4% respectively. Whereas, in the urban women the prevalences was 10.8% and 3.9% for chronic bronchitis and COPD correspondingly [11]. Its important to note that particularly in women patients diagnosis is being delayed because increased incidence of cigarette smoking, indoor passive smoking and indoor pollutant exposured are most of the time left unnoticed [12].

Talking about the health system dependant problems; we refer to lack of wide usage of the essential diagnostic tool as spirometer and inefficient cigarette control programs. Though nowadays standardization problems can be argued of, spirometer is still indispensable for the measurement of the pulmonary functions, the only and unique diagnostic test. Screening tests with the aid of spirometer in cigarette smokers and peoples with other risk factors is very vital. Note that the most basic and cheap yet the most difficult measure that can be taken against COPD is effective and adequate cigarette control program. Without dismissing the fact that cigarette quitting polyclinics are increasing and laws barning cigarette smoking in public places are being enforced, it worth admiting that alot still has to be done.

According to GOLD 2011 definition, COPD is a generally progressive, persisitent air flow restriction due to intensified chronic inflammatory response of the airways and lungs against harmful gases and particules. Also, physiological dysfunction ensuing from the pathological defect is taken as basis. To measure the physiological dysfunction pulmonary function test is needed. Nevertheless, arguments as to which of the parametres of the pulmonary function test is to be definitive for the diagnonis are stil ongoing [13].

In contrary to GOLD’s guideline stating: FEV1/FVC<70% after bronchodilator indicates obstruction, we all know that aging related pulmonary alterations lead to low FEV1/FVC ratio. Using a fixed value as stated above implies overdiagnosing COPD in the elderly and underdiagnosing COPD in the youths. Since many and different ideas abound regarding the FEV1/FVC ratio, the idea of taking the predicted value for each and every individual has gained some importance. Its been declared that GOLD criteria is somewhat misleading in half of the elderly and 20% of the young patients [14]. On the other hand, using FEV1/FVC below the 5th percentile of the predicted value as a criterion for obstruction, as stated in ATS/ERS guideline could not be adopted in the practical usage because of its dependency on prediction equations and reference population in addition to lack of reference values for different races.

Lack of reference values for various races also form the basis why some other parametres

like FEV1/FEV6 could not be used in the practice [15]. GOLD 2011, in an attempt to avert wrong diagnosis and minimise variations hereby suggests postbronchodilator FEV1/FVC ratio. Using fixed ratio is quite practical, it does not depend on age and gender. Albeit , alternative diagnoses and further investigations must be resorted to in elderly patients without typical symptoms, and young patients with FEV1/FVC > 70%.

Spirometric test is an exertional test which requires an individual's compliance. In this regard, technicians education, acceptabililty, repeatability (test-retest reliability) criteria and adherence to the standards is of high significance. Moreso, measurement devices also need standardization and calibration. Because, wrong spirometric tests directly implies wrong diagnosis and consequently wrong treatment. It should be emphasized that radiologic imagings and blood biochemical laboratory tests are not diagnostic in COPD. Just as its usual to have normal chest x-ray in the early stages of COPD, with advancing pathological changes signs of hyperaeration like flattening of the hemidiaphragm, tear-drop heart, air in- between the heart and diaphragm, incresaed retrosternal space, parallel costal bones etc can be seen. Elongated expirium, rhonchus, barrel chest and other physical examination findings can only be observed when the disease reaches a certain level.

Problems encountered in treatment. The principal problem faced in the course of treatment is the lack of complete curing drug. Up to date a drug that can completely cure the inflammation in COPD is yet to be discovered. Symptom releiving bronchodilator drugs form the first line drugs though they have no effect on the underlying pathological process. The basic bronchodilator drugs comprise beta2-agonist, anticholinergics, theophylline or their combinations. Treatment choice principally depends only the prensence of symptoms, individual pateint response to the treatment and side effects. Its suggested to use bronchodilator drugs when needed or in regular basis to aleviate or prevent the symptoms. In spain, a studied conducted by family physicians on patients with COPD symptoms where therapy was planned according spirometry, revealed that about 52.4% of the patients received either inappropriate or inadequate treatment [16].

The only and the vital measure that curbs advancement of the disease is quitting cigarette smoking or exposure [17]. Inability to make quit cigarette smoking constitute a major obstacle to the prevention and treatment of COPD. In addition to this, many problems still exist regarding appropriate usage of the inhaler devices, treatments during exacerbations and oxygen therapy. Owing to the fact that no enough time is available for the physicians to explain and illustrate the right usage of the prescribed inhaler drugs during polyclinics, inhaler drugs used in the wrong ways are to no avail [18]. Researches conducted even among health personnels and physicians disclosed an unexpectedly low technical know-how concerning the right usage of the inhaler drugs [19]. Strikingly, one discovers that elderly patients even unknowingly continue to use completely empty reliever inhaler drug cases that are devoid of dose meter [12].

It's of utmost importance to begin continous oxygen therapy in patients that develop respiratory failure. Atleast 15-18 hours (including sleeping hours) of continous oxygen therapy has been shown to increase life time in patients like these [21]. However, many studies point out insufficient oxygen therapy duration (number of hours) in patients who happen to develop respiratory failure at home [22]. Skin burns and serious fire outbreaks have been documented as active cigarette smoking patients approach an highly inflammable gas as oxygen with cigarette during oxygen therapy, hence caution be taken. Also, patients using oxygen concentrators must be informed about cleaning the device, periodic replacement of the filtre and annual calibration meaurement.

It's important not to overlook the disease (COPD)'s systemic effects and comorbidities. In association with COPD metabolic syndrome, myopathy, osteoporosis, lung cancer and other malignancies, ischemic heart diseases, heart failure, , depression, cerebrovascular diseases and sleep-apnea are frequently seen. These aforementioned associated diseases ought to be treated the same way they should have been without COPD.

Pulmonary rehabilitaion performed to reduced breathlessness and increase effort capacity also concurrently reduce exacerbation rate. Most particularly severe COPD patients ought to be

taught exercises that can be freely done at home. By so doing pulmonary rehabilitation will gain wide recognition and acceptance. Though studies showing preventive effect of long term antibiotherapy against exacerbation are available, it's not recommendend in the guidelines [23-24]. Again, vaccination against viral and bacterial causative agents of COPD exacerbations in accordance with GOLD guidelines is completely left to the the initiative of the authorities, no concensus is reached in our country, Turkey concerning this [25].

In conclusion, in order to resolve problems with COPD diagnosis the following must be done: increasing awareness about the disease, widening the usage of spirometry, using the spirometry as a screening tool, standardizing the spirometric measurements. Above all, COPD being a preventable disease, winning the strife against cigarette smoking will absolutely put an end to all the problems discussed above.

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