



A STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICES OF COPD IN YOUNG DOCTORS STUDYING IN A MEDICAL COLLEGE OF INDIA

Dr. Brahma Prakash

DNB (Respiratory diseases) Assistant Professor Department of TB and Chest Netaji Subhash Chandra Bose Medical College Jabalpur.India.

Dr. Sanjay Kumar Bharty*

DTCD, DNB (Respiratory Medicine) Associate Professor Department of TB and Chest Netaji Subhash Chandra Bose Medical College Jabalpur.India *Corresponding Author

ABSTRACT

Background: Several guidelines are available for managing COPD, but only a fraction of patients get diagnosed and treated as per these guidelines.

Aim : The aim of this study was to assess the knowledge, attitude and practices among young doctors about COPD and its management, and to identify parameters that could benefit from educational interventions.

Material and methods: In this single point contact, cross sectional study, Interns and post graduates students and Senior Residents (collectively designated as PGs in study) posted in General medicine department were assessed for their knowledge, attitude and practices of COPD.

Results: Eighty two Interns and 41 PGs were enrolled under the study. Majority (86%) identified smoking as single most important cause of COPD. Interns used mainly Chest Radiograph (n=53, 64%), whereas, PGs used Spirometry also along with Chest Radiograph (n=22, 53.6%) more frequently for diagnosing COPD. Thirty percent Interns prescribed inhaled bronchodilators in comparison to 95% PGs in their COPD patients. Thirty Six (44%) Interns think antibiotic has a role in managing exacerbation where as only 48% PGs think so. PGs evaluated more frequently their patients for Long term oxygen therapy (29%) as compared to Interns (7.3%). Sixty eight percent of subjects think that pulmonary rehabilitation can benefit COPD patients. Only 36.5% doctors think that Influenza vaccine has some role in management of COPD patients.

Conclusions: Doctors during initial years of their clinical practice, underutilize the COPD guidelines and there was also a difference between Interns and PGs on a lot of points regarding knowledge and practices, emphasizing the need to organize increasing CME rounds for those involved in care of COPD patients.

KEYWORDS : COPD, Knowledge Attitude Practices, Educational Interventions

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of health care burden worldwide and the only leading cause of death that is increasing in prevalence(1). COPD by 2020 is expected to rise to the 3rd position as a cause of death and at 5th position as the cause of loss of disability adjusted life years (DALY)(2). It is an under-diagnosed disease and doctors have an important role in early diagnosis, therapy, and prevention of COPD and its complications. Several guidelines are available on management of COPD with an identical aim of improving management of this disease(3–5). However, only a fraction of individuals get diagnosed in spite of available guidelines to diagnose and treat COPD(2). This study was conducted to assess the knowledge, attitude and practices among young doctors (Post Graduate students, Senior Residents and Interns) about COPD and its management, in order to identify parameters that could benefit from educational interventions directed towards these Group of doctors.

MATERIALS AND METHODS

The study was a cross sectional study, which was done in a predetermined group of doctors. The study was done in Interns who were doing their Compulsory rotating postings of various departments during the year and the post Graduate students and Senior Residents of General Medicine department who have either undergone or are presently undergoing a structured training programme which also involves management of COPD cases of various stages. This was a single contact based study for the assessment of their knowledge, attitude and practices with regards to diagnosis, treatment and prevention of COPD. During this single contact session the subjects were requested to fill a questionnaire which was so designed, such that, it had survey questions which covered most elements of the guidelines, such as, identification of risk factors, diagnostic criteria and procedures, treatment, preventive measures and control of COPD. The questionnaire used was initially validated in small group of subjects in the institute prior to its use for the study. The subjects did not

receive any briefing prior or after filling the forms. The subjects were not followed with the correct responses or any reassessment trial.

Study population: The study population consisted of Interns who were undergoing about one year of clinical training in various departments including General Medicine Department which deals with COPD patients and Post Graduate students and Senior Residents of Medicine Department. Interns are fresh MBBS graduates doing internship at a hospital and they form a study group who have acquired knowledge through medical education and their approach towards any disease is totally unbiased, whereas, the PGs or SRs (Hence forth Collectively abbreviated as PGs) on the other hand represent a group which has formed some attitude towards medical practice and are expected to be at a higher level in their clinical skills and patient management. They were explained about the study. Those who agreed to participate in the study were given the questionnaire to fill.

Inclusion and exclusion criteria's

All subjects in the study were from the field of allopathic medicine (MBBS) and they were among those working in hospital of medical college at Jabalpur. Interns were the subjects who have graduated from state medical university, whereas the PGs had undergone MBBS and Internship training from various universities and colleges in India before joining the post graduate course through a central or state level counseling process for seat allocation. Foreign medical graduates were kept as an exclusion criteria and those subject who were not willing for participation for study were excluded.

The study was approved by institutional ethics committee.

Statistical analysis

Data entry was done directly into a data base file of SPSS version 12.0 (SPSS inc.Chicago, IL) statistical package software, tabulated and analyzed using the same Software. On the basis of frequency distribution tables, statistical analysis was carried. Relevant testing

methods were employed particularly Chi-square test and Fisher's exact test to analyze the statistical significance. A p-value of less than 0.05 was considered statistically significant.

Results

One hundred twenty six subjects, including 85 Interns and 41 PGs were eligible for the study. Three interns expressed their unwillingness to participate in study. Hence, a total of 123 subjects participated in the study. Significant numbers of the Interns (64 %) as compared to PGs (24%) had not attended any CME in the previous one year. Overall, 106(86 %) of the all subjects responded that smoking was the single most important risk factor of COPD.

For the diagnosis of COPD, Chest X rays were used more frequently by Interns(n=67,81%) than PGs(n=25,61%), whereas, PGs advised spirometry more frequently(n=38,92.6%) for diagnosis than Interns. In addition to X rays PGs reported using spirometry to confirm the diagnosis more frequently

Similarly, for assessing their views on most important tools for assessing COPD severity, Interns responded for Chest Radiograph in 64.4%,28% for spirometry only, 4.8% for both chest X ray and Spirometry and only 2.4% would use Arterial blood gases also. Table No 1 shows the comparative assessment of responses of Interns and PGs for tools used for assessing severity of COPD

Modality used	Interns n(%age)	PGs n(%age)	P-Value
Chest X- ray	53 (64.6%)	17 (41.4%)	p = 0.03
Spirometry only	23(28%)	6(14.6%)	p=0.05
Both Chest X-ray & Spirometry	4 (4.8%)	16 (39%)	p=0.05
Arterial blood gases(ABG)	2(2.4%)	2(4.8%)	p>0.5

There was difference in therapeutic approach also towards stable COPD between Interns and PGs. Interns reported prescription of Inhaled bronchodilators only in 30%(n=25),where as rest were of opinion for prescribing oral drugs such as Salbutamol, Antibiotics and Cough syrups along with theophyllins tablets. Inhaled medicine was preferred treatment choice in PGs, who had reported using Inhaled medicine in 95% cases along with some oral medicine like Theophyllins Tablets. None of the groups responded for any role of corticosteroids in stable COPD. Out of all study subjects 58% (n=71) reported using Inhaled anticholinergics in stable COPD patients. In assessing the other treatment options for stable COPD patients 24.5%(29 subjects) knew about using N-Acetylcysteine as treatment option in COPD patients. Only about 10% of PGs reported noticing use of Roflumilast during treatment of COPD patients in Out-patient's settings, whereas, none of the Interns knew its role in managing COPD.

Thirty six (44%) of the Interns think that antibiotics do have a role in management of acute exacerbations of COPD, where as 40 percent think that antibiotics do not have a role and about 16% were not sure of role of antibiotics in management of acute exacerbations. (p<0.032) , where as 48 % PGs thought that antibiotics have a role in management of acute exacerbation, whereas, 18% think that antibiotic do not have any role and 26% were not sure of role antibiotic in every Exacerbation of COPD.

Long term oxygen therapy (LTOT) for chronic management of COPD is recommended as part of treatment in various COPD guidelines. The Interns and PGs were assessed about the use of LTOT; 6(7.3%) Interns and 12(29%) PGs knew about the Role and benefits of LTOT, implying that most of the subjects did not assess their patients for the Use of LTOT.

Use of ABG for assessing disease severity correlated directly with the advice of domiciliary LTOT.

For the prevention of infections 45 (36.5%) subjects think that there is some role of influenza vaccine in management of

COPD, 36 (29%) do not think so and 42(34%) were not sure about the role of influenza vaccine in management of COPD. When the two groups were compared 29 (71 %) PGs as compared to only 16 (19%) Interns think that there is some role of influenza vaccine in management of COPD (p< 0.009), but only 25% of doctors have actually used influenza vaccine ever.

Sixty eight percent of the subjects think that pulmonary rehabilitation can benefit patients of COPD where as 12 (12%) do not think so and 20(20%) were not sure about it. PGs were better informed about the benefits of pulmonary rehabilitation as compared to the Interns, hence the more number of PGs think that they shall be referring their patients for pulmonary rehabilitation.

DISCUSSION

Chronic obstructive pulmonary disease is a leading cause of morbidity, disabilities and mortality worldwide and represents a huge economical burden for healthcare system (6,7). Major efforts have been made in order to produce evidence based clinical guidelines to help physicians manage patients with COPD(8–10) . The guidelines aim to help all healthcare professionals to provide optimal treatment services for people with COPD; therefore they are developed by various scientific bodies keeping in mind the geographical area, where they shall be used, also considering the cultural aspects, financial and other healthcare resources availability of that region. These guidelines also aim to increase the awareness of COPD, so that preventive measures can also be improved upon (3)

In spite of availability of these guidelines, there are very few studies aimed to explore the knowledge of primary care physicians about current guidelines for management of COPD and to identify parameters that could benefit from educational interventions. C Inerva et al(11) showed that 50% patients were being treated as per GOLD COPD guidelines. A study done to assess the differences in COPD care among doctors who manage the disease (GPs Vs. pneumologists) found lack of control and variability in the pattern of care among patients controlled by different type of physicians(12). Eighty percent of GPs were confident of diagnosing asthma and 79% were confident of differentiating asthma from COPD(13).

Smoking is considered to be a major causative risk factor in development of COPD and many smokers continue to smoke in spite of knowing the ill effects of smoking and even after reading the statutory warning on products for smoking. COPD is therefore, considered as a self inflicted injury (disease) by most of the physicians, as shown in a study(14). Our study also found similar attitude of most of the interns and PGs, who believed that nothing can be done for a COPD patient, if the patient does not quit smoking. Considering COPD a self inflicted disease, many physicians were nihilistic about the treatment of patients who continue to smoke, in comparison to any patient suffering from any infectious disease, where the physician attributes sufferings of the patient to a micro organism and hence they are more vigorous in their approach towards treating the disease. In this scenario, it becomes further important to disseminate knowledge about the causation of COPD, because COPD can also be caused due to various other risk factors such as genetic predisposition, exposure to organic and inorganic dusts, fumes, chemical agents and air pollutants and many patients are now being diagnosed as COPD who are never smokers.(15). Although, GOLD guidelines (15) recommend spirometry as the gold standard for the diagnosis of COPD, but its utilisation in the diagnosis of COPD is not up to the optimum. A R Farzi et al(16) in their study observed that nearly 69% medical officers from the departments other than medical department thought spirometry was important for diagnosing COPD. In another study also, it was found that 82% of physicians opted for spirometry (17). In a study, the reasons given for failure to use spirometer were that, spirometry was not considered necessary for the diagnosis of COPD or there were logistical limitations to the access of the patients to the lung function testing laboratories(18).In our study also, only 40%(n=49) of doctors advised spirometry for the diagnosis of COPD.

Most of the guidelines recommend Chest roentogram not to diagnose COPD, but to rule out other diseases, but in our study, 64.6% and 41.4%, Interns and PGs respectively, were using Chest X-ray for diagnosis of COPD.

In a study it was found that, (17), 82% physicians opted for spirometry, 3% for CXR and 4% for ABG and 11% for physical examination as the 1st clinical examinations used to confirm a suspected diagnosis of COPD. Indian guidelines also advocate physical examination as an important aspect in the diagnosis of COPD and using spirometry as a confirmatory tool of clinical diagnosis (19).

Inhaled therapy in the form of long acting β -2 agonists or short or long acting acetylcholine bronchodilator medicine is to be preferred over oral therapy. In our study more percentage of Interns prescribed oral therapy in comparison inhaled therapy, whereas PGs were using inhalation therapy in higher number of their patients with COPD.

The role of inhaled corticosteroids (ICS) in COPD is limited to reducing the frequency of exacerbations and improving health status and does not have effect on declining FEV1 (15). In our study, none of the study groups were knowing the exact role of Inhaled corticosteroids. Systemic therapy with steroids was prescribed by 29.1% of GPs and 69% of pulmonologists in exacerbation of COPD in a study (20). In our study, 30% doctors (n=37, 32 PGs and 5 Interns) responded to prescribe oral/injectable steroids in acute exacerbation of COPD. The long term oxygen therapy (>15 hr per day) to patients with COPD has been shown to increase survival (21). But the indication of LTOT are specific and defined, for using it in COPD patients (15), but in our study only 14.6% of doctors assessed their COPD patients for home oxygen therapy, which is considerably less as compared to a study in which 60% of doctors in medical department would refer patients for oxygen assessment (16).

The use of influenza vaccine was found much less in patients of COPD in our study (3.5%), in comparison to another study where 62% reported administering influenza vaccine annually (17). Unaffordability of these vaccines by many patients may be a reason for their lesser use in our country, but the knowledge about its role is a different factor, which needs further emphasis, so as this modality of management is used more. The role of structured, well planned pulmonary rehabilitation in patients of COPD is being increasingly recognized to benefit the patient's health status. In our study, 68% of doctors had the opinion that pulmonary rehabilitation can benefit patients of COPD, still only 42% of GPs and 62% of interns think that they shall be referring their patients of COPD for some pulmonary rehabilitation programme.

In spite of wide dissemination of international and national guidelines, this survey suggests that primary care physician (during initial years of their clinical practice) underutilize the recommendations of these guidelines in the diagnosis and management of COPD. This study also identifies gaps in physician knowledge that are potential targets for future educational efforts. There was difference between Interns and GPs on a lot of points regarding knowledge of COPD. This difference may be attributed to the lack of fresh update of knowledge and less number of CME programme attendance among physicians, emphasizing the need to organize increasing CMEs rounds for those involved in care of COPD patients. The Teaching curriculum of PG students may need some structured planning to familiarize them with the treatment guidelines of COPD, so that they may utilize the knowledge from these guidelines in patient care.

Hence, there is a need to organize educational programme for primary care practitioners on the current concepts of diagnosis, management and prevention of COPD with special emphasis on the available evidence based guidelines.

REFERENCES

- Hurd S. The impact of COPD on lung health worldwide: epidemiology and incidence. *Chest*. 2000 Feb;117 (2 Suppl):15-45.
- Murray CJ, Lopez AD. Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease Study. *Lancet*. 1997 May 24;349:1498-504.
- Pauwels RA, Buist AS, Calverley PM, Jenkins CR, Hurd SS, GOLD Scientific Committee. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. NHLBI/WHO Global Initiative for Chronic Obstructive Lung Disease (GOLD) Workshop summary. *Am J Respir Crit Care Med*. 2001 Apr;163(5):1256-76.
- Siafakas NM, Vermeire P, Pride NB, Paoletti P, Gibson J, Howard P, et al. Optimal assessment and management of chronic obstructive pulmonary disease (COPD). The European Respiratory Society Task Force. *Eur Respir J*. 1995 Aug;8(8):1398-420.
- BTS guidelines for the management of chronic obstructive pulmonary disease. The COPD Guidelines Group of the Standards of Care Committee of the BTS. *Thorax*. 1997 Dec;52 Suppl 5:S1-28.
- Mannino DM, Homa DM, Akinbami LJ, Ford ES, Redd SC. Chronic obstructive pulmonary disease surveillance--United States, 1971-2000. *Morb Mortal Wkly Rep Surveill Summ Wash DC*. 2002 Aug 2;51(6):1-16.
- Mannino DM, Homa DM, Akinbami LJ, Ford ES, Redd SC. Chronic obstructive pulmonary disease surveillance--United States, 1971-2000. *Respir Care*. 2002 Oct;47(10):1184-99.
- Celli BR. ATS standards for the optimal management of chronic obstructive pulmonary disease. *Respirol Carlton Vic*. 1997;2 Suppl 1:S1-4.
- Bach PB, Brown C, Gelfand SE, McCrory DC, American College of Physicians-American Society of Internal Medicine, American College of Chest Physicians. Management of acute exacerbations of chronic obstructive pulmonary disease: a summary and appraisal of published evidence. *Ann Intern Med*. 2001 Apr 3;134(7):600-20.
- Snow V, Lascher S, Mottur-Pilson C, Joint Expert Panel on Chronic Obstructive Pulmonary Disease of the American College of Chest Physicians and the American College of Physicians-American Society of Internal Medicine. Evidence base for management of acute exacerbations of chronic obstructive pulmonary disease. *Ann Intern Med*. 2001 Apr 3;134(7):595-9.
- Incorvaia C, Pravettoni C, Riario-Sforza GG. Drug treatment of asthma and COPD in the general practice: adherence to international guidelines. *Giorn It Allergol Immunol Clin*. 2005;15:111-5.
- Judith Garcia-Aymerich, Joan Escarabill, Ramon M. Marrades, Eduard Monsó, Esther Barreiro, Josep M. Antóaf et al. Differences in COPD care among doctors who control the disease: General practitioner vs. pneumologist. *Respiratory medicine Vol -100, Issue 2, Pages 332-339*
- Halpin DMG, O'Reilly JF, Connellan S, Rudolf M, BTS COPD Consortium. Confidence and understanding among general practitioners and practice nurses in the UK about diagnosis and management of COPD. *Respir Med*. 2007 Nov;101(11):2378-85.
- Barr RG, Celli BR, Martinez FJ, Ries AL, Rennard SI, Reilly JJ Jr, et al. Physician and patient perceptions in COPD: the COPD Resource Network Needs Assessment Survey. *Am J Med*. 2005 Dec;118(12):1415.
- Global Strategy for Diagnosis, Management, and Prevention of COPD. Updated February 2013. Evidence-based guidelines for COPD diagnosis, management, and prevention, with citations from the scientific literature. Available at: www.goldcopd.com. Accessed Feb 8, 2013
- Fauzi AR. Knowledge and practice of medical doctors on chronic obstructive pulmonary disease: a preliminary survey from a state hospital. *Med J Malaysia*. 2003 Jun;58(2):205-12.
- Rutschmann OT, Janssens J-P, Vermeulen B, Sarasin FP. Knowledge of guidelines for the management of COPD: a survey of primary care physicians. *Respir Med*. 2004 Oct;98(10):932-7.
- Caramori G, Bettoncelli G, Tosatto R, Arpinelli F, Visonà G, Invernizzi G, et al. Underuse of spirometry by general practitioners for the diagnosis of COPD in Italy. *Monaldi Arch Chest Dis Arch Monaldi Mal Torace sFondazione Clin Lav IRCCS Ist Clin Tisiol E Mal Appar Respir Univ Napoli Secondo Ateneo*. 2005 Mar;63(1):6-12.
- Gupta D, Agarwal R, Aggarwal AN, Maturu VN, Dhooria S, Prasad KT, et al. Guidelines for diagnosis and management of chronic obstructive pulmonary disease: Joint ICS/NCCP (I) recommendations. *Lung India* 2013;30:228-67
- M. Decramer, P. Bartsch, R. Pauwels, J.C. Yernault Management of COPD according to guidelines. A national survey among Belgian physicians *Monaldi Arch Chest Dis* 2003; 59: 1, 62-80
- Stoller JK, Panos RJ, Krachman S, Doherty DE, Make B. Oxygen therapy for patients with COPD: Current evidence and the long-term oxygen treatment trial; *Chest* 2010;138:179-87