Chronic Obstructive Pulmonary Disease; an Pidemiological Prospective Study

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ABSTRACT:
BACKGROUND:
COPD is preventable and treatable disease state characterized by airflow limitation that is not fully reversible, The airflow limitation is usually progressive and is associated with an abnormal inflammatory response of the lung to noxious particle or gases. Primarily caused by cigarette smoking (1)..COPD is the fourth leading cause of death worldwide and estimated to be the third cause of death by 2020(5).

OBJECTIVE :
*To describe sample of COPD patients by important parameters recommended from *GLOBAL INITIATIVE FOR COPD &* COPD PROFESSIONAL ORGANIZATION, (wwwgoldcopd.com &www COPD professional .org).
* To have an enough idea about the prevalence of disease in Iraqi patients, study risk factors, , methods of diagnosis & management .

PATIENTS AND METHODS :
A cross sectional study of 200 patients that were recruited from outpatients & inpatients at medical city Those patients diagnosed as COPD according to ;\ -Age more than 35 years History of cough or productive cough, or. history of shortness of breath with.FEV1/ FVC less than 0.7 & FEV1 is 80% of predicted (MILD COPD) by spirometry Exclude patients-Patients with mixed obstructive & restrictive ventilator defect byspirometry. The study conducted from March 2005- March 2006 (about 1 year). to evaluate & compare the different way of presentation ,diagnosis, management & therapeutic measures. A total number of 200 patients were seen, examine,A send for important (available) tests needed & their medical records .

RESULTS:
Diseases are more prevalent in male 162 patients (81%) than female 38 patients (19%) & M;F about (4/1).Also COPD are more common in those who lived in rural area 127 patients(63.5%)than those in urban area 73patients(36.5%). show smoking are the most important risk factor in COPD patients recruited in this study about 177 patients(88.5%) are smokers than 23 patients (11.5%) are never smoke. smokers about 117 patients (58.5%) are current smokers(94 patients 47% male & 23 patients 11.5% female) than 36 patients (18%) are ex smokers (29 patients 14.5% male & 7 patients 3.5% female) than 17 patients(8.5%) are passive smokers (12 patients (6%) male & 5 patients 2.5% female, than 7 patients (3.5%) all of them male are pipe smokers, In analysis cough presentation, we noticed 20 patients (10%) have dry cough and 140 patients (70%) have had productive cough. In those complaints from productive cough show 34 patients (17%) are   scanty amount of sputum than 27 patients (13.5%) have moderate, and 79 patients (39.5%) large amount. .

CONCLUSION:
Cough and age are the most important predictors of the disease..tobacco smoking is the most important risk factors for COPD&smoking cessation is the single most effective important preventive steps cost effective in COPD management... Air pollution either indoor or outdoor plays an important role in development of COPD.-
KEYWORD: COPD (Chronic obstructive pulmonary disease).

INTRODUCTION:

Chronic obstructive pulmonary disease (COPD) is a common and costly disease with great implication for health [1]., COPD was the sixth leading cause of death in the world in 1990 responsible for more than 2 million or 4% of deaths[2] By 2020, the mortality is expected to increase to 4-5 million or 7% Of all deaths, and COPD is expected to rise to third position, after only ischemic heart disease and cardiovascular disease [3].COPD was classified according to criteria developed by British Thoracic Society(BTS) , American Thoracic Society(ATS), And the Global initiative of COPD(GOLD).

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As the disease progresses, subjects experience increasing deterioration of their health-related quality of life (HRQL),The prevalence of COPD varies considerably between countries and areas, from 3% in India to 23% in the inner city of Manchester, UK, to7% in Spain & USA to 9% in Sweden. In general, the prevalence of COPD in those aged above 45 years estimated to be 8% according to BTS & 14% according to GOLD &ATS[6,7,8].COPD is preventable and treatable disease state characterized by airflow limitation that is not fully reversible .The airflow limitation is usually progressive and is associated with an abnormal inflammatory response of the lung to noxious particles or gases. Primarily caused by cigarette smoking .

IRAQ is the only country not involved as membership in both these world organization(*GLOBAL INITIATIVE FOR COPD &* COPD PROFESSIONAL ORGANIZATION, (wwwgoldcopd.com &www COP professional .org).- So by this study and used most of parameters| needed and available in our country may eligible to become membership

OBJECTIVE:

*To do database for this disease, according to the most of the parameters recommended from *GLOBAL INITIATIVE FOR COPD &* COPD PROFESSIONAL ORGANIZATION, (wwwgoldcopd.com &www COP professional .org).-

*To have an enough idea about the prevalence of disease in IRAQI patients, study risk factors, the methods of diagnosis & management of this problems

PATIENTS AND METHODS:

Study design .Descriptive, a cross sectional study .

Study setting and patients population . study of 200 patients were recruited to outpatients and inpatients at medical city(Baghdad teaching hospital , specialized surgical hospital & special nursing home hospital) . The study conducted from March 2005- March 2006 (about 1 year).

Study subject. Those patients diagnosed as COPD according to ;Inclusion criteria. *Age more than 35 years old History of cough or productive cough, or. history of shortness of breath with. FEV1/ FVC less than 0.7 & FEV1 is 80% of predicted (MILD COPD) by spirometry.* Exclusion criteria.-*age less than 35 years old. Patients with mixed obstructive & restrictive ventilator defect by* spirometry.

RESULTS ;

In this limited a cross sectional study of 200 patients were recruited noticed. Diseases are more prevalent in male 162 patients (81%) than female 38 Disease commonly presented in age 60-70 years old (mean 65.3+2) about 103 patients (51.5%) than 50-60 years old about 42 patients(21%) than 70-80 years old 32

The study conducted from March 2005- March 2007 (about 2 year).to evaluate & compare the different way of presentation, diagnosis, management & therapeutic measures.

Data collection. Across sectional , total number of 200 patients were seen, examine, send for important (available) test needed & their medical records were studded. Analysis regarding COPD database that used as; General data; Age. Sex. –Occupation Address either urban or rural Risk factors smoking cigarette, cigar or pipe smoking was measured by pack . years (which refers to amount of cigarette consumed as pack per day times the number of years smoked. Pollution either indoor or outdoor Presentation data-Cough either dry or productive. Chest pajn.DyspneaThe medical research council Dyspnea scale assess Dyspnea . Regarding examination data: Body mass indexQUETELET INDEX it is equal to the weight in Kg divided the square of the height in meters , the exact index values used to determine weight categories vary from authority to authority but in general the fallowing scoring system is used (33) .Under weight less than 18.5. Healthy range   1 8.5-25 Over weight 25 -30 Obese.

spirometry

Depend on FEV1% of predicted & FEV1/ FVC graded in to;

SEVERITY	FEV1/FVC	FEV1% OF PREDICATED.
Mild COPD	< 0.7	> 80%
Moderate COPD	<0.7	50-80%
Severe COPD	< 0.7	30-50%
Very severe COPD	<0.7	< 30%

Regarding treatment data;-Bronchodilators therapy (types, route of administration) -)   Steroid (types, route of administration) Other line of treatment as antibiotics, vaccination, long term O2 therapy, pulmonary rehabilitation, surgery. Associated chronic disease as hypertension, diabetes mellitus ...etc.

Statistical analysis.

The statistical significance of an association between two variables was assessed by using Chi square (X^2) test of independence. An estimate was considered statistically significant if its calculated value was less than p< 0.05 level of significance with 95% confidence. We used correlation regression for the relation between BMI and COPD severity patients (19%) & M;F about (4/1).Also we noticed COPD are more common in those who lived in rural area 127 patients(63.5%)than those in urban area 73patients(36.5%)

patients (16%) and age group 40-50 years old 23 patients (11.5%) as in table(1) .

Table 1: Relation between age group & sex in COPD patient

	Age group	No of patients	%	M	%	F	%
1	40-50 y.old	23	11.5%	19	9.5%	4	2%
2	50-60 y.old	42	21%	33	16.5%	9	4.5%
3	60-70 y old	103	51.5% <&	80	40%	23	11.5%
4	70-80 y old	32	16%	30	15%	2	1%
	TOTAL	200	100%	162	81%	38	

COPD are more in those work in agricultures way mainly as farmers about 83 patients (41.5 %) than military jobs 36 patients (18 %) ,those deal with textile 29 patients (14.5%), work in medical services 17 patients (8.5%) than drivers either long or short distances driving 13 patients (6.5%) than working in teaching way either students or teachers 9 patients (4.5%), than work in different type of industry 7 patients (3.5%) than who have had free jobs 6 patients (3%).

Regarding risk factor smoking are the most important risk factor in COPD patients recruited in this study about 177 patients(88.5%) are smokers than 23 patients (11.5%) are never smoke. In those who are smokers about 117 patients (58.5%) are current smokers(94 patients 47% male & 23 patients 11.5% female) than 36 patients (18%) are ex smokers (29 patients 14.5% male & 7 patients 3.5% female) than 17 patients(8.5%) are passive smokers (12 patients (6%) male & 5 patients 2.5% female, than 7 patients (3.5%) all of them male are pipe smokers as in table (2).

Table 2: Relation between smoking types & sex in COPD patients.

	Smoking types	No. of patients	%	M	%	F	%
1	Current smoking	117	58.5%	94	47%	23	11.5%
2	Ex smokers	36	18%	29	14.5%	7	3.5%
3	Passive smokers	17	8.5%	12	6%	5	2.5%
4	Pipe smokers	7	3.5%	7	3.5%	-	-
5	Never smokers	23	11.5%	20	10%		1.5%
	total	200	100%	162	81%	38	19%

Another risk factor were studied are socio-economic state show almost all COPD patients in low & moderate state about 81 patients (40.5%) & 97 patients (48.5%) respectively .but only 22 patients (11%) in good socio-economic state. In asking about air pollution, we noticed 46 COPD patients (23%) are exposed to pollute air either in-door 7 patients (3.5%) or out-door 37 patients (18.5%).
Regarding clinical presentation 160 patients (80%) complains from cough, than 138 patients (69%) are Dyspnea while 80 patients (40%) complains from chest pain .
In study Dyspnea which main complaining from 138 patients (69%) in this collected COPD patients we noticed 26 patients (13%) presented in grade 2 than 94 patients (47%) grade 3 than 18 patients (9%) grade 4 and there is no patients presented in grade 0 or 1 as show in table(3).

Table 3: Percentage grade of Dyspnea in COPD patients.

Grade of Dyspnea	No, of patients	69%	100%
Grade 0	-	-	-
Grade 1	-	-	-
Grade 2	26	13%	18.8%
Grade 3	94	47%	68.1%
Grade 4	18	9%	13.04%
Total	138	69%	100%

In calculate body mass index(BMI) of all patients show 55 patients(27.5%) are in healthy range (BMI range 18.5-25) than 65patients(32.5%) are under weight(BMI < 18.5%) than 67 patients (33.5%) are overweight (BMI range 25-30) & only 13 patients(6.5%) are obese(BMI >30) as table(4).

Table 4: Illustrated result of BMI in COPD patient.

BMI grading	No, of patients	%
Underweight < 18.5	65	32.5%
Healthy range 18.5-25	55	27.5%
Overweight 25-30	67	33.5%
Obese > 30	13	6.5%
total	200	100%

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total	200	100%

In reading Electrocardiography (ECG) of all patients included in this study, we noticed some patients have more than one abnormality but in general, we show 86 patients (43%) have normal ECG than 96 patients (48%) sinus tachycardia, 36 patients (18%) ventricular ectopic beats ,28 patients(14%) P pulmonale, 18 patients (9)Atrial ectopic beats, 16 patients (8%) a trial fibrillation & only 6 patients (3%) complain from supraventricular tachycardia as in table (5).

Table 5: ECG finding in COPD patients.

ECG finding	No, of patients	%
Sinus tachycardia	96	48%
Ventricular ectopic beats	34	17%
P pulmonale	28	14%
Atrial ectopic beats	18	9%
Atrial fibrillation	16	8%
Supraventricular tachycardia	6	3%
Normal ECG	86	43%

Another parameters chest x ray (CXR) reading we noticed the following ;136 patients (68%) have normal CXR, 49 patients(44.5%) have sign of hyperinflation chest (emphysematous chest) while 15 patients (7.5%) show prominent lung marking(dirty lung) sign of chronic bronchitis, 34 patients(17%) have pneumonic consolidations & only 6 patients(3%) have bulla range from large to small size .

In measuring severity of COPD by using spirometry grading that recommended from American thorax society (ATS) guidelines of COPD, we found 108 patients (54%) in moderate stage than 53 patients (26.5%) in sever stage than 24 patients (12%) in very severe stage & only 15 patients (7.5%) in mild stage as in table (6).

Table 6: Spirometry severity of COPD patients.

Spirometry stages	No, of patients	%
mild	15	7.5%
Moderate	108	54%
severe	53	26.5%
Very severe	24	12%
total	200	100%

DISCUSSION :

A limited study was not truly observed COPD prevalence in large city as BAGHDAD , COPD are more prevalent in male than female as 81% to 19% respectively M/F about (4/1).This result similar in that studded in CATAONIA- SPAIN as COPD more in male than female but percentage of male to female 2/1 (14), And in the STOCKHOLM-SWEDEN are 1.2 / 1 (13 , 22) and in the AMESTERDAM-DUTCH about 1/1 (23).However, this result completely differs in that studded in OREGON-USA where percentages of male to female are I/1.5 (47), this mainly due to percentage of female to male in this community is high and increase smoking habit in female. In our study percentage of disease very high in male mainly firstly smoking habit still more common in male than female , secondly of securely state in our country not allow to all COPD patients to come hospital.

This study showed COPD is common in those who lived in RURAL area (79%) than URBAN areas (21%), this result completely differ from worldwide result, this mainly due to low social-economic state , smoking habit, and air pollution in RURAL areas around BAGHDAD very high because distributions of illegal small factory as clay brick factory(16).

Regarding age group , CPOD in this study commonly presented in age 60-70 years old (mean 65.3+2) about(51.5%), as in AMESTERDAM- DUTCH where mean age (67.7 years old) about (52%)(23),Moreover, about 45% in age group 60-70 years old in STOCKHOLM- SWEDEN (10,13,32).

Study showed COPD more in those who lived in rural area and have had agriculture jobs about (41.5%) than (14.5%)in those work in textile jobs(blue collar jobs) this apposite what study in CATOLONEA-SPAIN show COPD more in those work in metal industry (manual worker) about (11.5%) and in blue collar about (102%)(14).

 Smoking is the most important risk factor for COPD worldwide as in this study we show (88.5%) of COPD are smokers (current, passive,ex- smokers .. .ets) and (11.5%) are never smokers. This result similar to that studded in SWEDEN about (89.3%) are smokers and (11.7%) are never smoked, in spite of smoking habit are decreasing in SWEDEN since 1970(10,13).

Also this result may be similar to that presented in BRITSH THORACIC SOCAITY (BTS) guidelines about prevalence of COPD in non-smokers who aged between 70-77 years old are (16%) and those who currently smokers in the same age are (45%) not included. Smokers.

Other risk factors as air pollution, socio-economic state and occupation play an important role in the prevalence of COPD as supported by all guidelines and $ this study show (23%) of COPD patients are exposed to air pollution(indoor or outdoor) and (89%)are low to moderate socio-economic state.

 In compares clinical presentation of COPD patients worldwide and in this study ,we show common presentation   are cough (80%) either dry or productive, Dyspnea(69%) and (40%) presented with chest pain but in ROTTERDAM- DUTCH (94%) presented with cough (11, 12, 21, 23), and in STOCKHOLM-SWEDEN (69%) presented with cough(13,22).This big difference between result mainly depend on type of guidelines that used in collecting COPD patients, in SWEDEN depend on BTS guidelines and in our study & DUTCH depend on GOLD guidelines (2,4).

In analyzing finding of standard ECG in COPD patients recruited in this study , we show;(43%) have had normal ECG and (57%) have abnormal ECG while THOMAS&VALABHJI detect only (7%) have abnormal ECG (27, 28) and CORZZA&PASTURE detect abnormal ECG in (31%) of COPD patients (28).In compare type of ECG, abnormality with other Iraqi study done by JAWAD & H. AL.DULAMIY...et al, titled as (cardiac arrhythmia in COPD) (29).In our study we found (48%) have sinus tachycardia, (17%) ventricular ectopic, (14%) P.pulmonali, (9%) Atrial ectopic, (8%) Atrial fibrillation Only (3%) supraventricular tachycardia. But in AL.DULAMIY study show (72%) have had Atrial ectopic, (64%) ventricular ectopic, (24%) Atrial fibrillation & only (10%) have supraventricular tachycardia (29).Most of ECG abnormalities in COPD are due to hypoxia after exclusion of ischemic heart disease, metabolic effect & arrhythmogenic drugs are used. In addition, our study illustrated (33.5%) of COPD patients are overweight (BMI 25-30), (32.5%) are underweight (BMI 18.5),while (27.5%) are in healthy range (BMI 18-25) and only (6.5%) are obese (BMI>30) (30,31,32).Our result differ from that obtained from other Iraqi study by ALI.H&HASHIM.M.ALKADHIMI..et al (BMI in stable COPD patients)were found (22.3%) are in healthy range, (34.2%) are underweight, and(42.2%)are overweight(33).But same result are recorded in STOCKHLOM-SWEDEN &AMESTERDAM-DUTCH.In AL.KADHIMI et al study done on 76 stable COPD patients inAL.KADHIMIA hospital only.)

.Spirometry staging in our study are (61.5%) in mild to moderate stage, (26.5%) in severe stage and only (12%) in very severe stage, these result

differ from that studded in DUTCH were (80%) are in mild to moderate stage & (20%) in severe to very severe stage (34,35)This explain who

disease become danger in our country, which mainly due to patients ignorance, lately diagnosis of disease and security state than prevent (only severe &very severe) come to hospital.

CONCLUSION:

Tobacco smoking is the most important risk factors for COPD&smoking cessation is the single most effective important preventive steps cost effective in COPD management

COPD is disease of low to moderate socio-economic state ,Air pollution either indoor or outdoor plays an important role in development of COPD.

RECOMMINDATION;

Trained practice assistants team could cheek all patients who smoke for COPD at little cost to the practice, to perform good COPD database.

Comprehensive tobacco control policies and programs with clear, consistent, and repeated nonsmoking messages should be delivered through every feasible channel, legislation to establish smoke free schools, public facilities, and work environments should be encouraged by government officials, public health worker, and the public. Reduction of total personal exposure to occupational dusts, and indoor& outdoor air pollution are important goals to prevent the onset and progression of COPD.

The recognition of the true size of the problem and corresponding efforts to increase early identification of COPD can help to reduce the morbidity and mortality that associated with COPD at risk populations.

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