Saudi COPD Group Newsletter

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VISION:

Prevention, earlier detection and providing the best medical care for patients with COPD will result in improved outcomes, quality of life and consequently a lower burden on the patients, their families, the healthcare system and the community.

MISSION:

To serve as a recognized group of excellence for a comprehensive, state of the art, evidence-based approach through providing scientific educational activities and research initiatives to healthcare professionals, patients with COPD and the general public.

BACKGROUND AND OBJECTIVES:

The Saudi COPD group is a scientific and educational group, working under the umbrella of the Saudi Thoracic Society (STS). The aim is to enhance awareness of COPD in healthcare professionals and increasing public health education regarding COPD for the patients and their families and in the community.

The objectives of the group will be achieved by organizing scientific educational activities, including conferences, seminars, courses and workshops for healthcare professionals and conducting public educational activities for the patients diagnosed with COPD in healthcare facilities or via social networks.

The group's members are physicians and others healthcare professionals with a deep interest and extensive experience in COPD diagnosis and management. They have a strong and continuous commitment to achieve the objectives of the group and improve the awareness of the disease and the quality of life of the patients with COPD.

The panel members of Saudi COPD group had selected the following recent papers from various journals related to all aspects of COPD hoping will be useful and helpful in your practice and patient care.

Chronic obstructive pulmonary disease

Abstract: Chronic obstructive pulmonary disease (COPD) is a major cause of morbidity, mortality, and health-care use worldwide. COPD is caused by exposure to inhaled noxious particles, notably tobacco smoke and pollutants. However, the broad range of factors that increase the risk of development and progression of COPD throughout the life course are increasingly being recognised. Innovations in omics and imaging techniques have provided greater insight into disease pathobiology, which might result in advances in COPD prevention, diagnosis, and treatment. Although few novel treatments have been approved for COPD in the past 5 years, advances have been made in targeting existing therapies to specific subpopulations using new biomarker-based strategies. Additionally, COVID-19 has undeniably affected individuals with COPD, who are not only at higher risk for severe disease manifestations than healthy individuals but also negatively affected by interruptions in health-care delivery and social isolation. This Seminar reviews COPD with an emphasis on recent advances in epidemiology, pathophysiology, imaging, diagnosis, and treatment.

Reference:

https://www.sciencedirect.com/science/article/pii/S0140673622004706?via%3Dihub

Abstract: Chronic obstructive pulmonary disease (COPD) was traditionally thought to be caused by tobacco smoking. However, recognition of the importance of non-smoking-related risk factors for COPD has increased over the past decade, with evidence on the burden, risk factors, and clinical presentations of COPD in never-smokers. About half of all COPD cases worldwide are due to non-tobacco-related risk factors, which vary by geographical region. These factors include air pollution, occupational exposures, poorly controlled asthma, environmental tobacco smoke, infectious diseases, and low socioeconomic status. Impaired lung growth during childhood, caused by a range of early-life exposures, is associated with an increased risk of COPD. Potential mechanisms for the pathogenesis of COPD in never-smokers include inflammation, oxidative stress, airway remodelling, and accelerated lung ageing. Compared with smokers who develop COPD, never-smokers with COPD have relatively mild chronic respiratory symptoms, little or no emphysema, milder airflow limitation, and fewer comorbidities; however, exacerbations can still be frequent. Further research-including epidemiological, translational, clinical, and implementation studies-is needed to address gaps in understanding and to advance potential solutions to reduce the burden of COPD in never-smokers.

Reference:

https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S2213260021005063?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2213260021005063%3Fshowall%3Dtrue&referrer=https:%2F%2Fpubmed.ncbi.nlm.nih.gov%2F

Short-Term Oxygen Therapy Outcomes in COPD

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Rationale: Short-term oxygen therapy (STOT) is often prescribed to allow patients with chronic obstructive pulmonary disease (COPD) to be discharged safely from hospital following an acute illness. This practice is widely accepted without being based on evidence.

Purpose: Our objective was to describe the characteristics and outcomes of patients with COPD who received STOT.

Patients and methods: The study was a secondary analysis of the INOX trial, a 4-year randomised trial of nocturnal oxygen in COPD. The trial indicated that nocturnal oxygen has no significant effect on survival or progression to LTOT, allowing our merging of patients who received nocturnal oxygen and those who received placebo into a single cohort to study the predictors and outcomes of STOT regardless of the treatment received during the trial.

Results: Among the 243 participants in the trial, 60 required STOT on at least one occasion during follow-up. Patients requiring STOT had more severe dyspnoea and lung function impairment, and lower PaO2 at baseline than those who did not. STOT was associated with subsequent LTOT requirement (hazard ratio [HR]: 4.59; 95% confidence interval [CI]: 2.98-7.07) and mortality (HR: 1.93; 95% CI: 1.15-3.24). The association between STOT and mortality was confounded by age, disease severity and comorbidities. Periods of STOT of more than one month and/or repeated prescriptions of STOT increased the probability of progression to LTOT (OR: 5.07; 95% CI: 1.48-18.8).

Conclusion: Following an acute respiratory illness in COPD, persistent hypoxaemia requiring STOT is a marker of disease progression towards the requirement for LTOT.

Reference:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9342700/

Prevalence, Pattern, Risks Factors and Consequences of Antibiotic Resistance in COPD: A Systematic Review

Abstract: A concern of antibiotic use in chronic obstructive pulmonary disease (COPD) is the emergence and propagation of antimicrobial resistance (AMR). A systematic review was conducted to determine prevalence, pattern, risk factors and consequences of AMR in COPD. Bibliographic databases were searched from inception to November 2020, with no language restrictions, including studies of any design that included patients with COPD and reported prevalence and pattern of AMR. 2748 unique titles and abstracts were identified, of which 63 articles, comprising 26,387 patients, met inclusion criteria. Forty-four (69.8%) studies were performed during acute exacerbation. The median prevalence of AMR ranged from 0-100% for Pseudomonas aeruginosa, Moraxella catarrhalis, Klebsiella pneumoniae and Acinetobacter baumannii. Median resistance rates of H influenzae and S pneumoniae were lower by comparison, with maximum rates ≤40% and ≤46%, respectively, and higher for Staphylococcus aureus. There was a trend towards higher rates of AMR in patients with poorer lung function and greater incidence of previous antibiotic exposure and hospitalisation. The impact of AMR on mortality was unclear. Data regarding antimicrobial susceptibility testing techniques and the impact of other risk factors or consequences of AMR were variable or not reported. This is the first review to systematically unify data regarding AMR in COPD. AMR is relatively common and strategies to optimise antibiotic use could be valuable to prevent the currently under-investigated potential adverse consequences of AMR.

Reference:

https://www.tandfonline.com/doi/full/10.1080/15412555.2021.2000957

Clinical effects of TB sequelae in patients with COPD

Background: TB is a risk factor for chronic obstructive pulmonary disease (COPD) development and causes the global burden of COPD to increase. The impact of TB sequelae on COPD has been ignored for years.OBJECTIVE: To determine the prevalence of TB sequelae in patients with COPD and investigate the effect of TB sequelae on COPD clinic burden.METHODS: A total of 172 patients who attended the chest diseases outpatient clinic were included in the study. Detailed anamneses of their TB were taken, and pulmonary function tests were performed. The COPD Assessment Test (CAT) questionnaire was administered to determine the health status, and the modified Medical Research Council (mMRC) scale was used to assess the severity of dyspnoea. Thorax computed tomography images were reviewed. The patients were divided into two groups based on the presence of TB sequelae. All data from the two groups were compared.RESULTS: Of 172 patients with COPD, 66 (38%) had TB sequelae; 28 (46%) patients with TB sequelae had no history of TB. Two patients with TB history had no TB sequelae. The group with TB sequelae had lower body mass index ($P < 0.001$), more emergency admissions ($P = 0.018$), and higher CAT and mMRC scores ($P = 0.002$ and $P = 0.004$, respectively). In the group with TB sequelae, bronchiectasis was more common ($P = 0.001$).CONCLUSION: In patients with COPD, TB sequelae are very common and increase the COPD clinic burden. The presence of TB sequelae causes an increase in the use of healthcare services by patients with COPD and, therefore, an increase in the burden of COPD. Prevention, early diagnosis and timely treatment of TB are therefore very important.

Reference:

https://www.ingentaconnect.com/content/iuatld/ijtld/2022/00000026/00000004/art00012;x-ic-live-03

Chronic obstructive pulmonary disease (COPD) in women due to indoor biomass burning: a meta analysis

Abstract: Chronic Obstructive Pulmonary Disease (COPD) is attributable to household air pollution and is known to increase the Disability Adjusted Life Years (DALYs), morbidity and mortality and women are most susceptible groups for the exposure. In order to understand the global risk among women with COPD due to exposure of household air pollutants, an evidence-based systematic review and meta-analysis was conducted. Meta regression analysis was carried out to identify potential sources of heterogeneity. The summary estimates of the included studies showed higher prevalence of COPD due to biomass fuel exposure in women. Clinical diagnosis has shown more risk of COPD prevalence compared to diagnosis based on spirometer test alone. However, the data between included studies for both clinical and spirometry-based studies showed higher heterogeneity. The present meta-data analysis has shown that household air pollutants may be a factor associated with increased risk of COPD in women.

Reference:

https://www.tandfonline.com/doi/abs/10.1080/09603123.2021.1887460?journalCode=cije20

Association of COPD exacerbations and acute cardiovascular events: a systematic review and meta-analysis

Background: The majority of patients with chronic obstructive pulmonary disease (COPD) suffer from comorbid cardiovascular (CV) disease. Accumulating evidence suggests a temporal association between COPD exacerbations and acute CV events, possibly due to lung hyperinflation, increased hypoxemia and systemic inflammation. The aims of the study were to estimate the risk of (1) acute CV events [acute myocardial infarction (AMI), CV-related death] or stroke in the months following a COPD exacerbation and (2) COPD exacerbation in the months following an acute CV event.

Methods: A systematic literature review of observational studies published since 2000 was conducted by searching literature databases (Medline and Embase). Studies were eligible if conducted in adults with COPD, exposed to either COPD exacerbation or acute CV events, with outcomes of acute CV events or COPD exacerbation reported. Studies were appraised for relevance, bias and quality. Meta-analyses, using random-effect models, were performed for each outcome of interest, thus providing a pooled relative risk (RR) and its 95% confidence interval.

Results: Eight studies were identified, of which seven were used for the meta-analyses examining the risk of CV events 1-3 months after an exacerbation compared with none. For stroke (six studies), RR was 1.68 (95% CI = 1.19-2.38). For AMI (six studies), RR was 2.43 (95% CI = 1.40-4.20). No studies exploring risk of exacerbation following an acute CV event were identified.

Conclusion: This meta-analysis identified a markedly increased risk of stroke or AMI within a relatively short period of time following a COPD exacerbation. Although the underlying mechanisms are not fully elucidated, patients with COPD should be monitored for risk of CV outcomes after exacerbations. In addition, preventing

Reference:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9340406/

Osteoporosis in COPD patients: Risk factors and pulmonary rehabilitation

Objectives: To present a review on the pathogenesis, risk factor and treatment of chronic obstructive pulmonary disease complicated with osteoporosis and provide new ideas for the diagnosis and treatment.

Data source: A systematic search is carried out using keywords as chronic obstructive pulmonary disease, osteoporosis, risk factors, and pulmonary rehabilitation.

Results: Patients with chronic obstructive pulmonary disease have a high prevalence of osteoporosis and a high risk of fracture. The mechanisms of osteoporosis in COPD patients are associated with general risk factors, such as smoking, reduced physical activity, low weight, and disease-specific risk factors, such as systemic inflammatory, Vitamin D deficiency, use of glucocorticoid, anemia, hypoxemia, and hypercapnia. The treatment of osteoporosis in COPD emphasizes comprehensive intervention, which mainly include basic treatment and anti-osteoporosis drugs. Noticeably, pulmonary rehabilitation program is an important part of treatment.

Conclusions: This work summarizes the pathogenesis, risk factor, prevention, and treatment of chronic obstructive pulmonary disease complicated with osteoporosis, and the latest progress of studies on chronic obstructive pulmonary disease and osteoporosis is discussed.

Reference:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9329018/

The long-term clinical impact of COPD exacerbations: a 3-year observational study (SHERLOCK)

Background and aims: Exacerbations of chronic obstructive pulmonary disease (COPD) drive disease progression and can lead to an accelerated decline in lung function and a burden on healthcare systems. The retrospective, observational cohort Study on HEalthcare Resource utiLization related to exacerbatiOns in patients with COPD (SHERLOCK; D5980R00014) evaluated the associations between exacerbation history and rates of subsequent COPD exacerbations in primary care patients from the National Health Service in Greater Glasgow and Clyde, United Kingdom.

Methods: Patients were stratified into four groups according to exacerbation history in the year before the index date: Group A (no exacerbations), Group B (1 moderate exacerbation only), Group C (1 severe exacerbation only), and Group D (⊠2 moderate or severe exacerbations). The frequencies of moderate and/or severe exacerbations were recorded over 36 months of follow-up and compared with reference Group A, using generalized linear models.

Results: Over 36 months of follow-up, the adjusted rate ratios (RRs, 95% confidence interval) of moderate or severe exacerbations relative to Group A were 1.60 (1.53, 1.67), 1.75 (1.50, 2.04), 1.61 (1.54, 1.68), and 3.61 (3.48, 3.74) for Groups B, C, B + C, and D, respectively. Compared with Group A, patients in Group C exhibited an increased rate of moderate (RR, 1.58 (1.35, 1.85)) and severe exacerbations (RR, 3.13 (2.20, 4.46)).

Conclusion: SHERLOCK highlights that even one moderate exacerbation increases the risk for subsequent exacerbations compared with having no recent prior exacerbations. Reviewing recent exacerbation history to ascertain future exacerbation risk and inform COPD management may reduce hospitalizations and improve patient outcomes.

Reference:

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8848076/

Abstract: his study aimed to assess physicians' attitudes toward delivering pulmonary rehabilitation (PR) to chronic obstructive pulmonary disease (COPD) patients and identify factors and barriers that might influence referral decisions. Between September 2021 and January 2022, a cross-sectional online survey was distributed to all physicians in Saudi Arabia. A total of 502 physicians completed the online survey, of which 62.0% (n = 312) were male. General physicians accounted for 51.2%, while internal-medicine specialists and pulmonologists accounted for 26.9% and 6.6%, respectively. Only 146 (29%) physicians had referred COPD patients to a PR program. The difference in referral rates between all specialties ($p = 0.011$) was statistically significant. Physicians with more years of experience were more likely to refer COPD patients to PR ($p < 0.001$). Moreover, a home-based PR program was preferred by 379 physicians (75.5%), and 448 (89.2%) perceived smoking cessation as an essential component of PR. Availability of PR centers (69%) was the most common barrier for not referring patients to PR. The overall referral rate was low among all physicians, owing to a lack of PR centers and trained staff. Home-based delivery was the preferred method of delivering PR, with smoking cessation as an essential component.

Reference:

https://www.mdpi.com/2227-9032/10/5/904/htm

Optimizing COPD Acute Care Patient Outcomes Using a Standardized Transition Bundle and Care Coordinator: A Randomized Clinical Trial

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Background: Acute exacerbations of COPD (AECOPD) are associated with high morbidity and mortality and frequent readmissions.

Research question: What is the effectiveness of a COPD transition bundle, with and without a care coordinator, on rehospitalizations and ED revisits?

Study design and methods: Two patient cohorts were selected: (1) the group exposed to the transition bundle and (2) the group not exposed to the transition bundle (usual care group). Patients exposed subsequently were randomized to a care coordinator. An AECOPD transition bundle was implemented in the hospital; patients randomized to the care coordinator were contacted ≤ 72 h after discharge. Six hundred four patients (320 to the care coordinator and 284 to routine care) who met eligibility criteria from five hospitals across three cities in Alberta, Canada, were exposed to the transition bundle, whereas 3,106 patients discharged from the same hospitals received the usual care. Primary outcomes were 7-day, 30-day, and 90-day readmissions, median length of stay (LOS), and 30-day ED revisits.

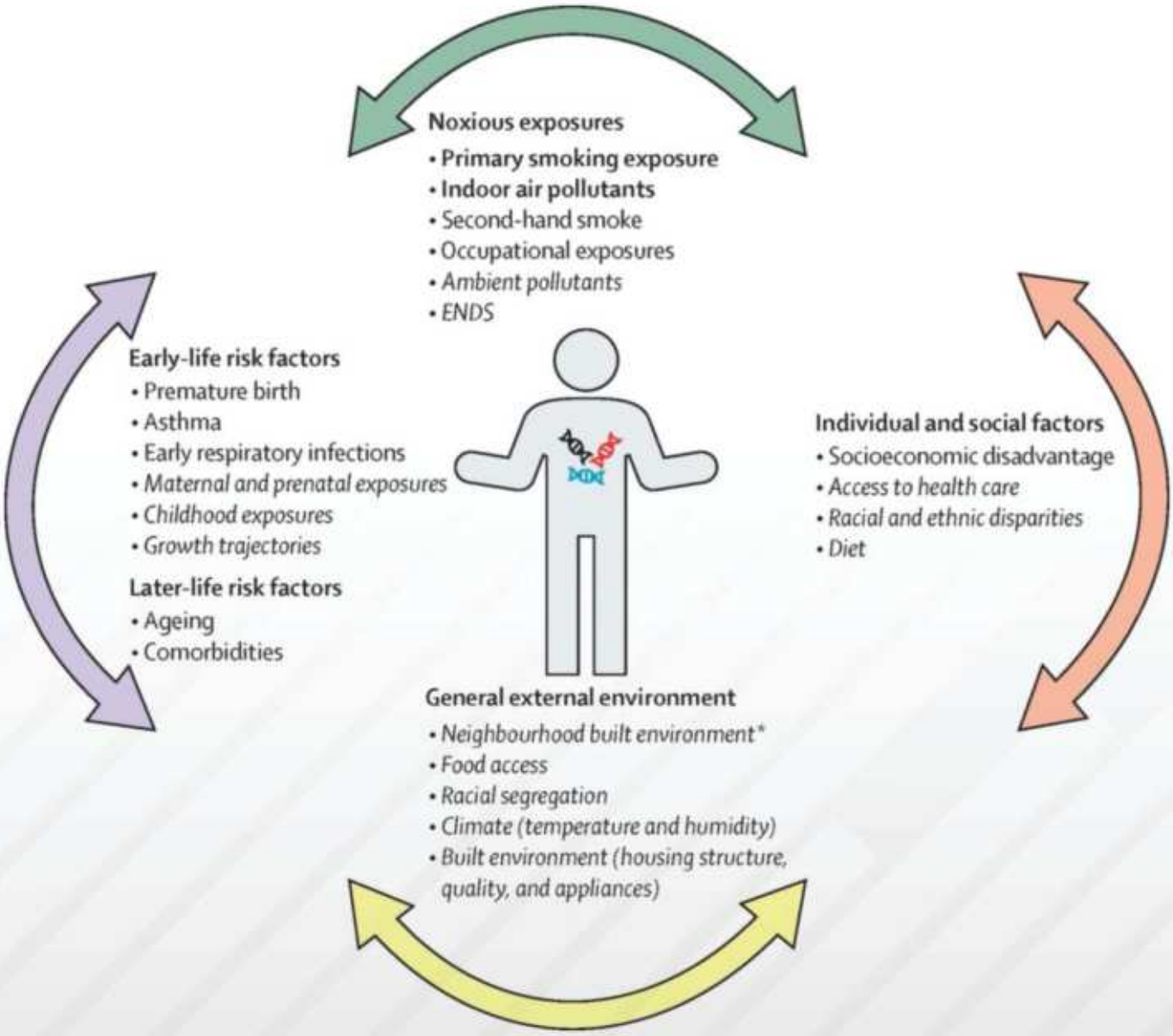
Results: The transition bundle cohort were 83% (relative risk [RR], 0.17; 95% CI, 0.07-0.35) less likely to be readmitted within 7 days and 26% (RR, 0.74; 95% CI, 0.60-0.91) less likely to be readmitted within 30 days of discharge. Ninety-day readmissions were unchanged (RR, 1.05; 95% CI, 0.93-1.18). The transition bundle was associated with a 7.3% (RR, 1.07; 95% CI, 1.0-1.15) relative increase in LOS and a 76% (RR, 1.76; 95% CI, 1.53-2.02) greater risk of a 30-day ED revisit. The care coordinator did not influence readmission or ED revisits.

Interpretation: The COPD transition bundle reduced 7- and 30-day hospital readmissions while increasing LOS and ED revisits. The care coordinator did not improve outcomes.

Reference:

https://www.clinicalkey.com/#!/content/playContent/1-s2.0-S0012369222005943?returnurl=https:%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0012369222005943%3Fshowall%3Dtrue&referrer=https:%2F%2Fpubmed.ncbi.nlm.nih.gov%2F

Risk factors for development, progression, and morbidity of COPD



Reference:

https://www.sciencedirect.com/science/article/pii/S0140673622004706?via%3Dihub

COPD Assessment Test™ (CAT)

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Your name:	Today's date:

CAT
COPD Assessment Test

How is your COPD? Take the COPD Assessment Test™ (CAT)

This questionnaire will help you and your healthcare professional measure the impact COPD (Chronic Obstructive Pulmonary Disease) is having on your wellbeing and daily life. Your answers, and test score, can be used by you and your healthcare professional to help improve the management of your COPD and get the greatest benefit from treatment.

For each item below, place a mark (X) in the box that best describes you currently. Be sure to only select one response for each question.

Example: I am very happy 0 X 2 3 4 5 I am very sad

			SCORE
I never cough	0 1 2 3 4 5	**I cough all the time**	
I have no phlegm (mucus) in my chest at all	0 1 2 3 4 5	**My chest is completely full of phlegm (mucus)**	
My chest does not feel tight at all	0 1 2 3 4 5	**My chest feels very tight**	
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 4 5	**When I walk up a hill or one flight of stairs I am very breathless**	
I am not limited doing any activities at home	0 1 2 3 4 5	**I am very limited doing activities at home**	
I am confident leaving my home despite my lung condition	0 1 2 3 4 5	**I am not at all confident leaving my home because of my lung condition**	
I sleep soundly	0 1 2 3 4 5	**I don't sleep soundly because of my lung condition**	
I have lots of energy	0 1 2 3 4 5	**I have no energy at all**	
		TOTAL SCORE	

Last Updated: February 24, 2012