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Challenges of managing respiratory disorders in Low-middle Income Countries

PARTICIPANTS FROM

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STRIVING FOR PULMONARY CARE

ReSOK
RESPIRATORY SOCIETY OF KENYA

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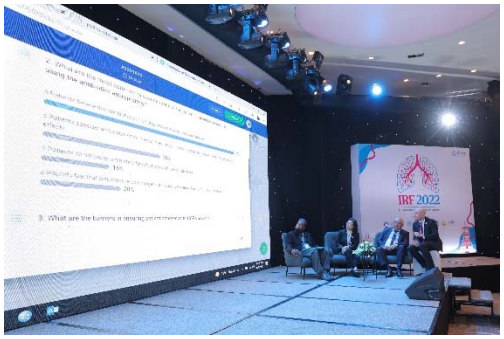
International Respiratory Forum 2022

Getz Pharma holds a groundbreaking international educational event annually in respiratory medicine with pulmonologists to understand better disease management gaps through debate and discussion with delegates coming from different parts of the world. It's popularly known as the **International Respiratory Forum**. The 1st edition of this academic event was held in Amman, Jordan in 2020 where 40 pulmonologists from Pakistan and Jordan participated. Getz Pharma holds the legacy to continue arranging IRF every year and in **2022**, the **3rd edition of IRF** was scheduled in **Ho Chi Minh City, Vietnam** in the month of October. The main highlights of the daylong scientific agenda were around disease management challenges of **Asthma, Community-Acquired Pneumonia (CAP), Chronic Obstructive Pulmonary Disease (COPD)** and **Idiopathic Pulmonary Fibrosis (IPF)** in **low-middle income countries (LMICs)**. More than **140 chest specialists** and **allergists** from **11+ countries** including Pakistan, Kenya, Sri Lanka, Philippines, Uzbekistan, Vietnam, Thailand, Kazakhstan, etc. actively participated in the brainstorming educational meeting. The theme of the event allowed us to gather some useful insights from all the esteemed participants on management challenges faced by the patients, their caretakers, their physicians and healthcare policymakers & organizations in each disease area via live polls. The opinions shared via polls were based on their clinical experiences.



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MESSAGES

Dr. Earl Louis Sempio

I am honored to contribute to this momentous occasion, as we celebrate the successful culmination of IRF 2022 and the publication of its commentaries in the Journal of Pakistan Medical Association. This gathering of brilliant minds and the subsequent collaboration has undoubtedly propelled our understanding of respiratory diseases, particularly asthma, to new heights.

Asthma, a chronic respiratory condition affecting millions worldwide, continues to pose significant challenges in patient management and care. Through the exchange of cutting-edge research, clinical insights, and collaborative efforts during IRF 2022, we have advanced our knowledge and forged new pathways towards enhancing the lives of asthma patients.

The discussions and deliberations at the conference have emphasized the importance of personalized treatment approaches, tailored to the unique characteristics of each patient.

I extend my gratitude to all my fellow attendees, whose expertise and tireless dedication have enriched this comprehensive supplement. Together, we have laid the foundation for future breakthroughs in asthma research and patient care. I am confident that the collective efforts of our community will continue to drive progress, ultimately leading to improved outcomes and a better quality of life for individuals with asthma.

Once again, my heartfelt appreciation goes out to everyone involved in the success of IRF 2022, and I look forward to witnessing the impact of our collective endeavors in the years to come.

MESSAGES

Dr. Saleem uz Zaman Adhami

It gives me great pleasure to share my thoughts and experiences through this platform. IRF 2022 held in Vietnam was a wonderful experience, providing doctors from different countries the opportunity to interact and share their knowledge and experiences. It was indeed interesting to note that the experience of dealing with asthma in different countries is quite similar. There is a taboo attached to the disease and hence the difficulty in accepting the diagnosis. There is also a problem with prescribing inhalers as patients are reluctant to use them. Once they do get better, they stop taking the treatment altogether instead of taking the preventive therapy. One of the reasons for this may be the cost of treatment.

All in all, we agreed while developing the consensus shared in these commentaries via polls that there is a problem firstly in convincing the patient that they have asthma; and once that is done, there is difficulty in making them take appropriate treatment; and finally, to convince the patients to continue with preventive therapy. As mentioned before, these problems are similar in the group of countries which were represented.

During our interaction, we also agreed to work harder to stick to the guidelines and help educate our patient population to get better results. Getz Pharma has always been at the forefront of providing educational material to doctors and patients. My thanks to Getz for providing us with this learning opportunity.

MESSAGES

Dr. Saw Win

Asthma is the most common chronic respiratory disease in children. The prevalence of asthma in the children of Myanmar is around 9 % of 10 -14 years old school children. With the increasing understanding of the pathophysiology of asthma and long-term controller therapy, we can make most of the children with asthma lead a normal life. But there are still many challenges to overcome especially in low and low-middle-income countries. The high costs of inhaler devices and medications are one of the challenges. In addition, inadequate knowledge and skills of health care providers treating asthma and lack of public awareness are common problems leading to the suboptimal management of asthma in children as well as adults.

It was a great privilege for me to attend and participate as a Faculty member of The International Respiratory Forum 2022 (IRF 2022) in Ho Chi Minh City, Vietnam. I was also appointed as a panelist in the Asthma symposium. A survey was conducted using a predesigned structured questionnaire about the challenges faced by each stakeholder (patients, family/caretakers, healthcare professionals, and healthcare policymakers) for Asthma management. We exchanged valuable information regarding the challenges of asthma management in both adults and children. The publication of the findings from IRF 2022 will contribute to solving the challenges in various aspects of Asthma management.

I would like to express my sincere and utmost gratitude to Getz Pharma and its entire team for efficient administrative support in organizing the IRF 2022 and these valuable publications.

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COMMENTARY NO. 1

Challenges to Asthma Management

Abstract

Despite significant advancements in our understanding of the disease process, the increased morbidity and mortality from asthma may be due in part to inadequate attention being paid to the management of the condition and approaches to improve bronchial asthma control. Data about the difficulties encountered in managing asthma in Low-middle income countries (LMIC) is scarce. The authors aimed to evaluate the challenges faced by each stakeholder in Asthma management. The International Respiratory Forum Conference 2022 commenced in Ho Chi Minh City, Vietnam, including 140 pulmonologists from 11 countries. A survey was conducted using a predesigned structured questionnaire about the challenges faced by each stakeholder (patients, family/caretakers, healthcare professionals, and healthcare policymakers) for Asthma management. Four groups were formed, physicians were randomly divided, and only one section of the questionnaire was distributed among the physicians of each group. Per the physician's perception regarding challenges faced by patients for asthma management, awareness about how to administer the dose or have poor inhaler techniques is usually still being determined. More than 50% believed that there is a need for additional patient education about the day-to-day management of their disease. The cost of therapy was considered the significant barrier faced by the family/caretakers affecting drug adherence. The frequently reported challenge from the physician's end was poor technique use because of poor asthma disease education followed by hurried communication by health care providers to the patients. Around 53% of pulmonologists from the policy maker group reported that the lack of access to affordable quality-assured inhaled medications was the major avoidable barrier that needs to be tackled on the highest priority by the policymakers. This survey has gauged the influence of personal, social, and clinical factors on asthma management and pointed out the gaps regarding adherence from patients' and health professionals' perspectives. The resolutions and inputs suggested providing a practical framework for patient-centered care that treats asthma as an inflammatory disorder and education promoting treatment compliance.

Keywords: Asthma Management, Challenges, Developing Countries

Introduction

Asthma is a common lung disease characterized by recurring respiratory symptoms of cough, wheezing and dyspnoea due to widespread narrowing of the airways. Asthma affects over 334 million people worldwide, making it one of the most prevalent diseases globally[1]. In many cases, asthma is severe and restricts a person's quality of life. Patients with asthma commonly experience increased airflow resistance with air pollution, and decreased humidity[2]. A variety of factors, including dust, tobacco smoke, and allergic reactions, can exacerbate an asthmatic patient's illness and create potentially fatal circumstances. The difficulties in treating an asthmatic patient are numerous[3]. Examination of the age-standardized deaths per million population published in the Global Asthma Report shows most of the deaths occur in low- and middle- income countries (LMIC). Many asthmatic children, adolescents and adults in LMICs lack access to effective and affordable asthma treatment[4].

Firstly the, patients with asthma need to understand how to manage their disease. The basics of treatment include identifying triggers, avoiding triggers, and taking medications as prescribed by a doctor[5]. However, educational interventions must reinforce these treatment strategies in patients' minds. Additional education about their disease is necessary as people with asthma are at an increased risk of fatal complications from asthma attacks. In addition, educating family members about how to help the asthmatic person reduces stress for both parties and promotes better outcomes for the patient[6].

Patient education is also mandatory when discussing proper inhaler techniques with patients. Inhaler technique refers to how a person coordinates breathing to deliver medication into the lungs. Proper timing of exhalation and inhalation is needed to have safe and efficient delivery of active agents. Furthermore, not all asthmatics use the same technique for their medication; family members need to know how to help a patient who is having difficulty in using their inhaler properly[7].

Lastly, patients must understand that resolution of symptoms does not equate to complete resolution of a disease course. Infections requiring antibiotics may trigger asthma which can be separately treated with bronchodilators. The sense of well-being with

bronchodilator relief should not be a reason to discontinue antibiotic treatment as it may result into antibiotic resistance[8].

Managing an asthmatic patient is difficult since they're at high risk for poor health outcomes if managed improperly. Additional patient education about the day-to-day management of their disease is necessary since many patients have no idea how to treat or prevent an asthmatic attack. Further family education is needed since there's rarely one solution for helping an asthmatic patient with family members who have yet to experience dealing with an asthmatic relative. At its core, managing someone with asthma requires a team effort; however, if everyone knows what they're doing, treatment is much easier[9]. Gauging the challenges faced by each stakeholder for Asthma management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers and organizations, is vital. This survey's purpose was to highlight the gaps and the possible suggestion to overcome challenges.

Methodology

A survey was conducted during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed on challenges faced by each stakeholder for Asthma management, namely the patients, the family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations.

Verbal consent was obtained, study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group. The questions and their options in each questionnaire addressed the documented key challenges of disease management and their possible solutions relevant to the assigned stakeholder group. The participants of each group were supposed to vote on the most relevant options as per their clinical experience.

For statistical treatment, the data analysis was conducted using SPSS Version 22.0. The quantitative data were presented as frequencies and percentages. SLIDO software[10] was used to present the survey results at the end of the conference.

Results

With respect to the patients, the most prevalent factor among barriers to controlling asthma was poor adherence to the treatment plan and recommended lifestyle changes. Lack of awareness about how to administer the dose or poor inhaler techniques was also commonly observed among patients by the participants (63%). Among the challenges faced by family or caretakers, the high cost and affordability issues of essential asthma medications were a major struggle. Furthermore, 77% of participants reported specifically to the Physicians category that Allergic rhinitis coexisted with asthma and complicated the diagnosis mostly. The frequently reported challenge from the physician's end was poor technique use because of poor asthma disease education followed by hurried communication by health care providers to the patients. Around 53% of participants from the policy maker group reported that the lack of access to affordable quality-assured inhaled medications was the major avoidable barrier that needs to be tackled on the highest priority by the policymakers. Disease education programmes for patients, physicians, and caretakers were considered the most effective modes of prevention implemented by the healthcare systems across the community to decrease the prevalence and mortality related to asthma.

Discussion

Poor adherence to the treatment plan and recommended lifestyle changes, lack of awareness about how to administer the dose or have poor inhaler techniques, lack of patient education, and treatment adherence were considered as the most prevalent challenges by the participants of asthma patients group. Regular exercise to improve lung function and avoiding smoking/pollution in daily life were suggested as essential lifestyle modifications that can help improve the quality of life of Asthmatic patients. The course of asthma is not solely influenced by pulmonary function or other biological factors[11]. Subjective perceptions of chronic illnesses may impact patients' adherence to therapy regimens. Considering the patients' understanding when offering medical advice and/or treatment is one of the difficulties health professionals encounter in boosting adherence.

The essential task of early detection and management of uncontrolled asthma falls on primary care clinicians[12]. This emphasizes the requirement for better instructions from the primary care physicians to help manage severe or challenging asthma and specific information regarding when patients should be sent for respiratory physician assessment. The current survey helped us to get an idea of how primary care doctors can help with the overall management of clinical conditions with the assistance of specialists. Poor use of medication devices and hurried communication by healthcare providers due to patient

Table 1: Responses obtained from the healthcare providers for Asthma management.

Questions	Responses	%
Patients		
What is the most prevalent factor, according to patients, among barriers to controlling asthma?	Cultural, psychosocial, and emotional beliefs and constraints about asthma and asthma medications	21
	Complex treatment regimens are difficult to follow	24
	Poor adherence to the treatment plan and recommended lifestyle changes	48
	Inability to understand the complexity, and severity of disease and its complications	31
There is usually uncertainty about asthma management among patients using inhalers. What may be the most valid reasons?	Social stigma and myths revolving around the use of inhalers only as an emergency medication for symptom relief and not as a regular maintenance treatment	23
	Patients prefer discrete oral treatment over inhalers	40
	Lack of awareness about how to administer the dose or to have poor inhaler techniques	63
	Fear of any potential unknown long-term side effects of the inhaler treatment or the disease itself	40
What is the most needed measure by the patients for managing asthma?	A need for additional patient education about the day-to-day management of their disease	53
	Psychological and social support for patients suffering from Asthma	23
	Better self-management behaviours and required change	33
	Adherence to therapy; better compliance (maintenance therapy and less reliever use)	50
What are the essential lifestyle modifications that can help improve the quality of life of Asthmatic patients?	Regular exercise to improve lung function	67
	Avoiding active or passive smoking and other pollutions in daily life	67
	Good organic and nutritious diet to boost the immunity	37
	Ensure hygiene and always avoid the triggers with active preventive measures	50
Family & Caretakers		
What are the struggles in managing asthma in children?	Identifying the potential triggers which can irritate the airways	47
	Delay is due to families; often waiting too long to start the treatment, which allows progressive damage to take place	56
	Overwhelming for many families to witness their patients requiring regular usage of controller medications like inhalers	50
	High-cost and affordability issues of essential asthma medications	62
The common challenges of caretakers and families of old and young dependent asthma patients are	Time management and work-life balance due to constant care required	50
	Financial constraints due to prolonged treatment of their patients	79
	Emotional and physical stress due to constant precautions	47
	Fear of finding the disease in other family members too	38
What essential measures should the caretakers of Asthmatic patients always take?	Keep the triggers away and ensure good air quality around their patients	68
	Getting their patients vaccinated for the frequent respiratory infections that can aggravate the symptoms of Asthma	47
	Must not seek immediate drastic changes; only consult the primary physician in case the therapy does not seem to work or the disease is worsening instead of attempting some infamous domestic/household remedies	44
	Must not ignore daily symptoms and/or avoid the regular medication usage	62
What are the most important guidelines that physicians should always convey appropriately to the caregivers of dependent asthmatic patients?	Correct use of relievers as soon as the flare-up occurs	71
	Existing co-morbidities that can aggravate the symptoms of asthma and vice versa	65
	Importance of identifying and avoiding the triggers	82
	Possible consequences if Asthma exacerbations become too frequent and educating them about the newer, safer treatment options.	71
Physicians		
Which of the following most commonly coexist with asthma and complicate the diagnosis?	Gastroesophageal reflux disease (GERD)	26
	Concomitant Obstructive sleep apnoea (OSA) & Obesity	13
	Allergic rhinitis	77
	COPD	19
	Bronchiectasis	6

Continued on next page...

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What are the challenges of asthma management? Choose as many as possible	Hurried communication by health care providers to the patients and lack of understanding of the patients	68
	Lack of expertise in the interpretation of key diagnostic pulmonary tests like spirometry	48
	The poor technique used for medication devices, especially inhalational drugs, because of poor means of asthma disease education	84
	Lack of awareness and implementation of National/hospital protocol or guidelines for treating Asthma (Know-do gaps)	65
HCPs spend less time considering and discussing the perceptions of each patient about their asthma because:	History and examination are usually non-specific	33
	Patient over-load	68
	Shortage of time	61
	Diagnose based on experience	16
Policymakers & Organizations		
96% of asthma deaths are in low and middle-income countries (LMIC), which are mainly due to some avoidable barriers. Which among these are needed to be addressed on the highest priority?	Lack of measures by the healthcare policymakers toward disease education	47
	Prioritization of acute care over chronic care and prevention by health systems	15
	Lack of access to affordable quality-assured inhaled medications	53
	Over-use of oral corticosteroids by physicians due to age-old practices and unawareness of newer treatment options	29
How can healthcare authorities and institutions ensure successful inhaler technique education across the community?	Asthma educators to be present at pulmonology clinics	21
	Empower pharmacists to educate and train patients	38
	Patient awareness material to be made widely and easily accessible	68
	Innovation in devices to make them user friendly	29
What urgent measures can be immediately taken in low-middle-income countries to combat the surge of poor disease management outcomes in Asthmatic patients?	Healthcare authorities must emphasize generating quality local data to better understand the local disease landscape and identify the specific challenges in the local communities	41
	Access to novel therapies like formoterol budesonide should be made easy, affordable, and vast by all the concerned healthcare authorities and stakeholders	15
	Local consensus guidelines should be widely disseminated, and the governing medical societies must ensure their implementation	21
	Disease education programmes and myth debunking sessions should be frequently carried out with the patients and their caretakers to avoid poor compliance of the patients and prepare their caretakers to handle any emergency asthma exacerbation	59
What are the most effective modes of prevention to be implemented by the healthcare systems across the community to decrease the prevalence and mortality related to asthma?	Educate the patients and their caretakers about identifying and avoiding the triggers	79
	Influenza and COVID Vaccination (Mass immunization to prevent complicating asthma)	32
	Inclusion of allergy shots/Biologics (immunotherapy) to be added in the treatment protocol by the healthcare authorities	12
	Take active measures to reduce environmental pollution and improve air quality	44

overload imposed a greater challenge in asthma management. Moreover, repeated exacerbations due to avoidance and/or reluctance towards maintenance therapies by the patients were considered the biggest concern when deciding the treatment regimen for asthma management.

Most asthma patients are treated in primary care, and general practitioners (GPs) are essential in diagnosing, treating, and early referral of patients with severe asthma. A treatment plan that takes a multifaceted approach to treat severe asthma may lessen exacerbations and improve patients' symptoms and quality of life. There is room for improvement in the coordination of community access to allied health input, treating risk factors and co-morbidities, and administering biological medicines for severe asthma, among other areas. To simplify and standardize referral and discharge processes for severe asthma, more work still needs to be done[13-17].

Considering the challenges faced by family and caretakers, in the physicians' opinion, financial constraints and affordability issues were the common struggles. It was highly recommended that the caretakers always ensure good air quality around their patients and try to keep the triggers away from the asthmatic patients. In Asia, the entire financial cost of asthma varies. The decrease of asthma-related morbidity, particularly in the more severe category, should be the top focus for areas that successfully implement universal ICS usage to attain

relatively low asthma mortality rates[18]. Early detection, referral to specialized facilities for treatment optimization in the severe asthma population, development of capacity for diagnostic improvement, and improved access to biologics and other expensive medicines are required. Collaboration across disciplines and public-private partnerships are necessary for this.

The lack of affordable quality-assured inhaled medications and accessibility of the patient awareness material was the major avoidable barrier that the policymakers needed to tackle on the highest priority. Hence patient education remains the most effective mode of prevention to be implemented by the healthcare systems across the community to decrease the morbidity and mortality related to asthma. Effective patient and physician education initiatives can be a solid connection between medical management and health education. Instead of replacing medical treatment, these activities have proven to supplement it. Such programmes have been created to fill the gap between patients and doctors and create a productive working relationship that will support superior medical care and improve family management abilities[18,19 19,20]. The share of morbidity and mortality attributed to chronic lung illnesses is rising as the affected population lives longer. Supporting proactive management, which includes giving an accurate diagnosis and a stable supply of cost-effective medications at an affordable price, is essential for the successful management of asthma. Many persons with chronic non-communicable lung diseases do not receive adequate treatment due to the lack of such infrastructure in many nations and the market failure that makes medications generally more expensive in low-resource locations. This has negative economic repercussions.

We still need to learn more about the factors contributing to the limited utilization of necessary respiratory medications in low-income settings. The use and availability of efficient treatments could be increased by systematically identifying and resolving these issues. This inquiry revealed significant issues with diagnosing asthma and managing it, as well as data collection, policymaking, patient knowledge, and medical attitudes. According to the study, policymakers, HCPs, and patients should address globally adaptable management methods from various angles. Therefore, it is crucial to give patients and HCPs pertinent education. The guidelines must strongly emphasize the fundamentals of initial evaluation, diagnosis, treatment plan, regular evaluation of patient progress, and adherence to newly proposed reforms.

Conclusion

This survey has gauged the influence of personal, social, and clinical factors on asthma management and pointed out the gaps regarding adherence from patients' and health professionals' perspectives. Further research must identify the associations between religious beliefs, control beliefs, illness knowledge, and medication adherence. If the suggested propositions can be fully merged into local practice, doctors can maintain effective care while lowering avoidable exacerbations and pointless burdens. The suggested resolutions provide an effective framework for patient-centered care that treats asthma as an inflammatory disorder and promotes patient compliance.

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MESSAGES

Dr. Muhammad Irfan

Community-acquired pneumonia (CAP) is a common and potentially serious respiratory infection with diverse causative agents and variable clinical presentations. It is a leading cause of morbidity and mortality worldwide, particularly among vulnerable populations such as the elderly, young children, and individuals with underlying medical conditions. Timely diagnosis, appropriate treatment, and preventive strategies are essential to reduce the burden of CAP and improve patient outcomes.

Community-acquired pneumonia poses substantial challenges in developing countries, primarily due to limited access to healthcare, socioeconomic factors, malnutrition, diagnostic limitations, lack of vaccination programs, antimicrobial resistance, and inadequate health education. Addressing these challenges requires a comprehensive approach involving improved healthcare infrastructure, enhanced access to diagnostics and vaccines, promotion of public health education, and sustainable strategies for appropriate antibiotic use. By tackling these challenges, it is possible to reduce the burden of CAP and improve outcomes for individuals in resource-limited settings.

It has been a great privilege for me to participate as a speaker and panelist in the International Respiratory Forum 2022 (IRF 2022) organized by Getz Pharma. The survey allowed us to emphasize many valuable information regarding the challenges in management of CAP in both adults and children. The publication of the findings from IRF 2022 will contribute to address the challenges in various aspects in management of CAP.

I would like to appreciate and encourage Getz Pharma's entire team for organizing the IRF 2022 and working on the publications to extend this valuable information to other peers and colleagues of respiratory medicine.

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MESSAGES

Dr. Imelda M Mateo

Pneumonia in adults just like in children is a major public health problem and requires effective interventions. Several risk factors such as active and passive smoking, concomi-tant chronic cardio-pulmonary and neurological illnesses, heavy alcohol intake, major trauma or surgery, long periods of immobility, indoor air pollution, crowding, poor dental health, old age and institutional habitat or care account for the high incidence and mortal-ity from the disease.

In the Philippines, Pneumonia has always been one of the top ten causes of mortality and one of the top five causes of morbidity. Figures from the 2021 Field Health Services Information System (FHSIS) report by the Department of Health (DOH) showed that pneumonia killed over 76,000 people in the Philippines.

There is an urgent need to vigorously renew our efforts against pneumonia in order to meet the goal of WHO in the control of the disease.

It was both a great opportunity and a privilege to participate in The International Respira-tory Forum 2022 (IRF 2022) in Ho Chi Minh City, Vietnam, as a member of the Scientific Committee and a panelist in the Pneumonia symposium. A study through survey was conducted among 140 pulmonologists from 11 countries. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for CAP management, including the patients, their family/caretakers, healthcare professionals, and healthcare policymakers & organizations in low-middle income countries.

A publication of the consensus from IRF 2022 will greatly contribute to addressing the challenges in various aspects of the management of Pneumonia.

I would like to extend my sincerest gratitude to Getz Pharma and its entire team for mak-ing me a part of this academic activity and for the efficient administrative support in organizing the IRF 2022 and the current publication.

MESSAGES

Dr. Kenneth Alberca

Community-Acquired Pneumonia (CAP) is one of the most common cause of mortality in developing countries such as the Philippines. It is of great importance for us pulmonologists who are in the frontlines in managing this disease to identify and address the complex and unique needs of every individual with CAP especially in the elderly patients with multiple co-morbidities in order to improve patient outcomes. The challenge sometimes lie in the health- seeking behavior of our patients in which there are significant delays in consultation due to financial and inaccessible health care institutions especially in people living in far-flung or geographically isolated areas. Hopefully, this will be addressed in our country with the recent approval of the universal health care law which seeks to provide free consultations to indigent patients and for the expansion of rural health units in order to provide easy accessibility for health concerns in patients living in far-flung areas.

During the IRF 2022, it was discussed that early consultation for respiratory symptoms, timely referral for hospital admission, proper antibiotic treatment and controlling comorbidities are the factors for improved patient outcomes in patients with CAP.

I thank the organizers for the successful conference, indeed there was a fruitful exchange of ideas and best practices in terms of pulmonary management.

COMMENTARY NO. 2

Challenges in the Management of Community-Acquired Pneumonia in Low-Middle Income Countries.

Abstract

Despite progress in developing new and powerful medications, Community-acquired Pneumonia (CAP) is still closely linked to significant morbidity and mortality, especially in Low-middle income countries (LMICs). Hence, a group of experts gathered to discuss the main challenges associated with CAP management by the stakeholders (patients, their families/caretakers, Healthcare professionals, and Healthcare policymakers & organizations). During the commencement of the International Respiratory Forum Conference 2022 held in Ho Chi Minh City, Vietnam, a survey was conducted, including 140 pulmonologists from 11 countries. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for CAP management in LMICs. Physicians were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants to determine their opinion regarding that respective stakeholder's challenges. Among the patient-related challenges, most physicians believed that self-medication was the most significant reason behind the high mortality rate from CAP as the patients continue to have various troubles in seeking timely diagnosis and treatment. It was found that healthcare expenditure is the most intriguing challenge experienced by families and caretakers of patients with CAP. Moreover, 52% agreed that the diagnosis made by healthcare providers are primarily based on clinical judgment, and Pneumonia Severity Index (PSI) is not commonly used for clinical prediction and patient outcomes. The physicians mostly believed that healthcare policymakers must focus on establishing early diagnostic and treatment strategies to reduce hospitalization rates and costs.

Keywords: Community-Acquired Pneumonia, Management, Challenges.

Introduction

Community-acquired Pneumonia (CAP) is a common infectious disease typically caused by bacteria or viruses. It is characterized by inflammation of the lung tissue, which leads to symptoms such as cough, chest pain, fever, and difficulty in breathing[1,2]. CAP can occur in people of all ages, but it is more common in older adults and people with chronic illnesses[3]. There are various types of CAP, including viral, bacterial, and atypical Pneumonia. Bacterial Pneumonia is the most common form of CAP and is typically caused by Streptococcus pneumoniae[4]. This type of Pneumonia can be severe, especially in older adults and people with chronic illnesses, and it can be associated with high hospitalization rates and mortality. The risk factors for CAP include smoking, exposure to air pollution, and having a weakened immune system[5].

Factors influencing the prognosis of CAP include the patient's age, overall health, and the type of bacteria or virus causing the infection[6]. It is more common in older adults and people with underlying health conditions, such as chronic obstructive pulmonary disease (COPD), heart failure, and diabetes. These co-morbidities can make the management of CAP more complex. Treatment usually involves antibiotics and supportive care, such as oxygen therapy and fluid replacement. However, the management approach varies depending on the underlying condition, the severity, and the cause of the infection[4].

There are several challenges in managing community-acquired Pneumonia (CAP); it can present with a wide range of symptoms, making it difficult to diagnose. In some cases, the clinical presentation may be non-specific, leading to a delay in diagnosis[7]. The causative pathogen of CAP can be challenging to identify, as a variety of bacteria, viruses, and fungi can cause it. Bacterial infections often cause CAP, and antibiotic resistance is becoming an increasingly common problem. This can make it difficult to choose an appropriate antibiotic treatment.

In order to control CAP, it is essential to administer antibiotics as soon as necessary[8]; however, the best course of action has not yet been determined. More significant mortality has been linked to initial antimicrobial therapy lacking efficacy against the offending microorganisms[9]. When contrasting beta-lactam monotherapy with beta-lactam plus macrolide or quinolone, the cluster RCT from Postma et al. displayed the same efficacy[10]. The ongoing argument between -lactam plus macrolide and -lactam plus fluoroquinolones in SCAP remains unresolved[11]. The initial examination of CAP patients must include a severity assessment[12]. There

is still no agreement on the best assessment tool or how to use it in clinical practice[13,14]. Self-medication, or the use of over-the-counter medications or antibiotics without the guidance of a healthcare professional, can be a concern in the management of CAP. It is known for a wide range of clinical courses, from mild and self-limiting to severe, with sepsis and septic shock that leads to ICU admission and even death. Identifying the high-risk groups and early interventions for those is crucial[15]. In some areas, there may be limited access to healthcare, making it difficult for people with CAP to receive appropriate treatment.

The present study aimed to evaluate healthcare providers' perception regarding the challenges faced by each stakeholder, including the patients, their family/caretakers, healthcare professionals, and healthcare policymakers and organizations related to CAP management.

Methodology

A survey was conducted during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for CAP management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations in Low-middle income countries.

Verbal consent was obtained, study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group. The questions and their options in each questionnaire addressed the documented key challenges of disease management and their possible solutions relevant to the assigned stakeholder group. The participants of each group were supposed to vote on the most appropriate options per their clinical experience.

For statistical treatment, the data analysis was conducted using SPSS Version 22.0. The quantitative data were presented as frequencies and percentages. SLIDO software[16] was used to present the survey results at the end of the conference.

Results

Among the patient-related challenges, 67% of physicians believed that self-medication was the most significant reason behind the high mortality rate from Pneumonia as the patients continue to have various troubles in seeking timely diagnosis and treatment. Moreover, 78% of them reported that the most common misconception of the patients causing reluctance in using the antibiotics appropriately, was that the patients believe that antibiotics can be stopped once symptoms are relieved. Regarding family or caretakers of patients with Pneumonia, 58% of physicians believed that healthcare expenditures are the most intriguing challenge. Surprisingly, 52% confirmed that the diagnosis is based on clinical judgment and Pneumonia Severity Index (PSI) is not commonly used for clinical prediction and patient outcomes. While 30% preferred other simpler methods for diagnosis. Healthcare policymakers must focus on establishing early diagnostic and treatment strategies to reduce hospitalisation rates and costs. As per the physician's opinion, the lack of health facilities and vaccination was the major gap in prevention from CAP, leading to poor disease outcomes.

Discussion

During the commencement of the International Respiratory Forum Conference 2022 held in Ho Chi Minh City, Vietnam, data was gathered on the perception of healthcare providers regarding the challenges in CAP management. It was found that the patients who self-medicate may not have a proper diagnosis of CAP and, as such, may not be taking the appropriate medication for their condition. This can delay recovery and potentially lead to complications. Self-medication with antibiotics can lead to the development of antibiotic-resistant bacteria, making it more difficult to treat CAP and other infections in the future[17-19]. In this survey, 67% of participants reported the self-medicating behaviour of the patients.

Healthcare expenditures can be a significant challenge for the families and caregivers of patients with Pneumonia, as the costs associated with treatment and management of the disease can be high[20]. Severe conditions requiring hospitalisation and intensive care, which can be costly, impose greater challenges[21,22]. After being discharged from the hospital, patients may require follow-up care, such as physical therapy or home health care. More than 50% of physicians reported that healthcare expenditure is the most intriguing challenge experienced by family and caretakers of patients with Pneumonia. While 89% believed early treatment could reduce hospitalisation and overall treatment cost. In severe cases, Pneumonia may lead to other severe conditions, such as sepsis, which require more costly and prolonged interventions like mechanical ventilation and organ support.

Table 1: Responses obtained from the healthcare providers for challenges in CAP management.

Questions	Responses	%
Patients		
Despite so many newer antibiotics, mortality from Pneumonia has not dropped as the patients have various troubles in seeking timely diagnosis & treatment; what are the most significant reasons?	Lack of access to quality healthcare in Low-middle income countries	58
	Self-medication (under and overdosing on antibiotics or use of home remedies)	67
	Poor air quality in the environment and domestic air pollution	20
	Delay in reporting to the HCP and hence, delayed diagnosis	36
What are the most common misconceptions of the patient's causing reluctance in using the antibiotics appropriately?	Patients believe that antibiotics can be stopped once symptoms are relieved	78
	Patients consider antibiotics as dangerous medications believing that they have grave and lethal side effects	35
	Patients do not prefer antibiotics for infections with low-grade fever	16
	Patients fear that antibiotics reduce hunger and cause weakness if used for a longer period	20
What are the barriers to ensuring patient adherence to HCP's advice?	Low education level of patients	46
	Patient not following the complete duration of therapy once the symptoms resolve	57
	Normalizing symptoms as a mild seasonal flu	15
	Cost of therapy	65
In Pneumonia, which symptom causes the biggest hindrance in the patient's daily activities?	Shortness of breath	65
	Cough	35
	Fever	29
	Pleuritic chest pain	42
Family and Caretakers		
What is the most intriguing challenge experienced by family and caretakers of patients with Pneumonia?	Frequent infections in a polluted area	21
	Hindrances to perform daily activities like education, job, etc.	21
	Healthcare expenditures	58
	Unawareness of dietary and hygiene requirements of pneumonia patients	16
What are the major concerns of dealing with the most vulnerable group of patients (old age, pediatrics) concerning age and complications?	Dependence on others to take medications timely	37
	Variable response to different medications	32
	Poor awareness of symptoms and difficulty expressing the intensity of illness	68
	Developmental factors in children and aging factors in elderly	5
What measures are the most essential while taking care of a pneumonia patient?	Warm beverages and avoidance of cold beverages	26
	Proper warm baths	0
	Regular use of steam through humidifiers or nebulizers	26
	Use of humidifiers and ventilators to keep the room air clean and well ventilated	63
What measures are important for the parents to take to reduce the frequency of respiratory infections in their children, especially where childhood respiratory infections are very common in the community?	Getting the children vaccinated timely according to the national immunization plan	68
	Provide a clean air environment at home	37
	Ensuring good hygiene practices	32
	Provide healthy and organic nutrition to avoid weak immunity	42
Healthcare Professionals		
Which decision during the management of CAP is more vital?	Deciding about In-patient or out-patient treatment	30
	Choosing an antibiotic with a narrow or broad spectrum (deciding the preferred class)	26
	Patients presenting with co-morbidities	61
	Antimicrobial resistance with potent drugs	22
Barrier to CAP diagnosis-specific-treatment based on Culture and Sensitivity is because of?	Culture and Sensitivity reports take time	65
	Patient reports after starting antibiotics	43
	Cost factor	17
	Patients' patience to wait for laboratory results	13

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Pneumonia Severity Index (PSI) is not used commonly for clinical prediction and patient outcomes because of the;	Complexity of tool	26
	Time and resource limitations	13
	Other simpler methods are used	30
	Diagnosis based on clinical judgment	52
Pneumonia is usually over/under-diagnosed because of the following conditions	Diagnosed and treated empirically based on symptoms without any investigation	55
	Pneumonia typing usually not done due to a paucity of resources and time	0
	Mimicking conditions like COPD, RHF, Flu, etc.	41
	Patients relying on OTC medications or alternate domestic remedies to avoid physician visits and treatment costs	32
HCPs spend less time on detailed history and examination in patients with suspected CAP because;	History and examination are usually non-specific	9
	Patient over-load	57
	Shortage of time	26
	Diagnose based on experience	52
Healthcare policymakers & organizations		
Which is the most important strategy to reduce overall treatment costs;	Low-cost antibiotic therapy	22
	Early treatment reduces hospitalization	89
	Managing adverse events and avoiding patient re-visits	22
	Keen patient follow-ups to monitor treatment outcomes	22
Increasing prevalence of concomitant chronic illnesses worsens CAP prognosis, particularly with the following diseases;	Past history of successful Pulmonary Koch's treatment	0
	Obstructive pulmonary diseases	89
	Cardio-vascular diseases	44
	Asthma	22
Antibiotic resistance is a big challenge; what needs to be ruled out to prevent AMR while taking history;	Use of any antibiotic with dosage and duration over the last three months for any infection	56
	Detailed medical record/ history to know any other concomitant illness/ drugs	33
	Exposure history (traveling, visits, family exposure, occupation)	0
	Any habitual self-medication history	44
Where are the gaps in prevention from CAP leading to poor disease outcomes?	Socioeconomic challenges include people living in close proximities	56
	Lack of health facilities and vaccination	78
	Low patient awareness	11
	Less time spent by HCPs on patient counseling	22

Pneumonia is typically diagnosed based on symptoms, physical examination, and diagnostic tests. A person with Pneumonia will typically have symptoms such as cough, chest pain, fever, and difficulty in breathing. A physical examination may reveal signs of Pneumonia, such as crackles or wheezing in the lungs or an elevated respiratory rate[23]. However, some diagnostic tests are also necessary to confirm the diagnosis; in this survey, 52% of participants reported that diagnoses are based on clinical judgment, and Pneumonia Severity Index (PSI) is not commonly used for clinical prediction and patient outcomes.

People with chronic illnesses, such as obstructive pulmonary diseases (such as chronic obstructive pulmonary disease or COPD), are at a higher risk of developing complications from Pneumonia. Chronic illnesses can weaken the immune system and make it more difficult for the body to fight off an infection[24]. Additionally, chronic obstructive pulmonary disease (COPD) can cause structural changes in the lungs, making it more difficult for mucous and bacteria to be cleared, which increases the risk of a secondary infection such as Pneumonia. 89 % of participants reported that increasing prevalence of concomitant chronic illnesses worsens CAP prognosis, particularly with obstructive pulmonary diseases. Patients with COPD and Pneumonia have increased morbidity and mortality; this is why managing these patients requires a multidisciplinary approach and closer monitoring.

Though this survey is based on a small sample size, this pilot project plays a pivotal role in highlighting the major challenges each stakeholder faces as per the physician's perceptions. Hence this data can be used to design future large-scale hypotheses to monitor CAP management challenges in each category.

Conclusion

CAP remains a major healthcare challenge in LMICs due to associated mortality rates, complications, and short and long-term consequences. In this article, we provided the list of challenges faced by patients, families, healthcare providers, and policymakers 1) Patient-related challenge; self-medication was the most significant reason behind the high mortality rate from Pneumonia as the patients continue to have various setbacks in seeking timely diagnosis and treatment. 2) Related to family or caretakers of patients with Pneumonia, the financial burden of healthcare expenditures can be a significant stressor for families and caregivers and can negatively impact the patient's recovery and overall well-being. 3) Among healthcare providers, the lack of the use of PSI for clinical prediction and patient outcomes was common, leading to delayed diagnosis and induced complications.[4] Healthcare policymakers must focus on establishing early diagnostic and treatment strategies to reduce hospitalization rates and costs.

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MESSAGES

Dr. Saadia Ashraf

Chronic Obstructive Pulmonary Disease (COPD), a major public health concern, is affecting millions of people globally, with the WHO estimating that approximately 65 million individuals suffer from moderate to severe COPD. It is the third leading cause of death worldwide, with over 3 million deaths attributed to COPD in 2019 alone. In low and middle-income countries, the burden of disease and its adequate management is a big challenge. Poor conditions, lack of literacy, exposure to smoking, indoor and outdoor pollution, industrial pollution, lack of robust health infrastructure and lack of resources are important factors contributing to the high burden of disease in these countries.

IRF 2022, is unique in its inception and brought together experts in pulmonology from many countries of the region, mainly from low to middle-income countries, to discuss the challenges faced in managing patients with COPD. Not only physicians but the perspective and challenges faced by other stakeholders like patients, caregivers and policymakers were also discussed in detail and polling was done to gather information.

Thought-provoking data was collected and reflected in this scientific publication, including poor knowledge and misbeliefs on the disease and its therapy, concerns on high costs, poor treatment responses and limited access to healthcare. Challenges and barriers in diagnosis and management of COPD is similar in these countries, hence a multifaceted approach is required, involving education and awareness campaigns, infrastructure development, affordable medication strategies, and comprehensive rehabilitation programs. By addressing these issues, these countries can improve COPD outcomes and enhance the quality of life for individuals living with this chronic condition.

This publication will help better understand the management burden of COPD in our region and will provoke further research and interventions. I`m personally grateful to Getz pharma for providing unconditional support, in arranging this cross countries scientific forum, promoting research and untiring efforts in alleviating the suffering of COPD patients.

MESSAGES

Dr. Sumedha Samankantha

COPD remains a global challenge and more so in low and middle-income countries. The reasons for this are multifactorial, high disease burden due to exposures and lifestyle practices, poor health literacy, poor social and economic conditions and limited access to health care are all contributors.

The IRF 2022 brought together experts in pulmonology from many countries of the region and one of the tasks taken up was to identify the challenges that are faced in managing COPD in this region. The deliberations were done by collecting ideas and opinions from all participants, most of whom were clinicians actively involved in managing patients with COPD. The process included obtaining the perspectives from four categories of stakeholders involved in managing COPD, namely the physicians, patients, family members and organizations.

Interesting insights were revealed which are published in detail in this scientific publication. Significant to note are the poor knowledge and misbeliefs about the disease and its therapy by the patients and caregivers concerns about high costs, poor treatment responses and limited access to health care. Of the medical practitioners, lack of access and underuse of investigations, failure to recognize the disease early and failure to refer were noted as significant barriers. For organizations and policymakers, the costs of managing uncontrolled disease were noted as significant.

With these insightful outcomes, I believe this publication will pave the way for a better understanding of the management burden of COPD in our region, and provoke further research on the interventions to help better manage our patients with COPD.

The continued support by GETZ Pharma in promoting research, dialogue and knowledge dissemination is acknowledged with gratitude.

MESSAGES

Dr. Naghman Bashir

COPD Chronic Obstructive Pulmonary Disease, ranks fifth among global burden of Non-Communicable Diseases (NCDs) accounting for almost 153 million Disability-Adjusted Life Years (DALYs), with Pakistan's share of 761 per 100,000 population. A rise in its share of NCDs has been seen consistently over the last decade. Unfortunately, no definitive curative treatment exists for COPD, though it can be very effectively prevented. And the best strategy for its prevention hides in smoking cessation, or more broadly, avoidance of smoke from all resources.

Smoking is the most important cause of COPD, though other factors like ambient particulate matter pollution, occupational particulate matter, gases and fumes, household air pollution from solid fuels, secondhand smoke, and ambient ozone pollution also contribute significantly. Smoking has been consistently on the rise since its introduction to Europe in 1650s, by Vasco De Gama. Despite ***capital punishment*** for smokers in Turkey and Russia during 1710-1720, smoking habits grew, as tobacco was grown increasingly in Virginia, USA. Smoking habits got a kick with the advent of matchbox around 1820. It is estimated that in 2020, around ***5.2 trillion cigarettes*** were consumed worldwide. Consumption of cigarettes (and cigars) has shown a small downward trend with the popularity of vaping. In 1976 Professor Michael Russell had written: "*people smoke for nicotine but they die from tar*".

It is encouraging though, that people are becoming more and more aware of risks of smoking due to start of smoking cessation clinics in pulmonology departments all over the country and commemoration of **No Tobacco Days on 31 May** each year. Yet our youths still is attracted to tobacco and its products because it cannot be ignored that *tobacco is the ONLY product in the world which, when consumed according to manufacturers' advice, can be fatal.*

Getz Pharma has taken an active role in addressing the issues, obstacles, myths and finding out-of-box solutions to stop this tobacco epidemic and finding ways of controlling and preventing COPD through its IRF program. It is sincerely hoped that collective wisdom from pulmonologists of Asian developing countries in the form of these publications would find solutions to problems of tobacco and COPD rise.

COMMENTARY NO. 3

Significant challenges of COPD Management in developing countries

Abstract

To explore the challenges faced by each stakeholder for COPD management, including the patients, their family/caretakers, healthcare professionals, and healthcare policymakers & organizations, the authors conducted a survey during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to questions related to challenges faced by each stakeholder for COPD management in Low-middle income countries (LMIC). Each group received one of the four sections of the questionnaire. It was found that 47% of doctors thought that patients couldn't understand the early symptoms as indicators of a serious illness and were afraid of forming a dependency on long-term drugs. According to 64% of doctors, the most frequent implications experienced by caregivers when caring for COPD patients were the financial burden of lifelong therapies and disappointments from treatment failure brought on by a lack of access to high-quality or specialized healthcare. Of the difficulties experienced by healthcare professionals, 50% said that misusing investigations for diagnosis resulted in delayed or underdiagnoses of COPD. The biggest issue with COPD referrals in developing nations was general practitioners' ignorance of recognizing high-risk patients and the need for their referrals. Approximately 80% of respondents said that a sizeable percentage of annual healthcare spending was consumed by expenses related to exacerbations and repeated ER visits. It is concluded that the questionnaire responses reflect physicians' perceptions and experiences in routine clinical practice. Increased knowledge of COPD diagnosis and treatment recommendations, as well as proactive identification of patients at higher risk of developing COPD due to environmental or lifestyle exposures, will help with prompt, accurate diagnoses and efficient treatments, ultimately improving patient outcomes.

Keywords: COPD Management, Challenges, Developing Countries

Introduction

The second most common cause of disability in South Asia, chronic obstructive pulmonary disease (COPD), is acknowledged as one of the most serious chronic diseases[1]. Early diagnosis and consistently accurate therapy throughout the early stages of the disease, when the symptoms are not yet too concerning, are crucial for treating COPD. The development of life-threatening symptoms, including dyspnea, decreased exercise tolerance, and ultimately respiratory impairment, can be postponed; these symptoms greatly lower the quality of life for patients[2]. COPD exacerbations lead to hospital admission and significant financial hardship[3]. The main objective in managing COPD is the prevention of exacerbations because severe exacerbations are linked to a considerable rise in mortality[4].

Based on the predominant symptoms of dyspnea and exercise limitation, as well as the persistence of exacerbations while receiving maintenance therapy, the course of treatment may be escalated or sustained[5]. Quitting smoking is the single most important intervention for lifetime risk reduction. Patient education in self-management should begin from the beginning of the disease because of its chronic nature. It has also been discovered that patient knowledge of present symptom levels and evaluations of exacerbation frequency is crucial. For "unstable" COPD, the current management paradigms for individuals with COPD have assumed pharmaceutical-oriented therapy, while for stable COPD, non-pharmacological management plays a more significant role[6].

It appears that the responsibility for managing patients with unstable COPD falls to the doctors who offer a course of medication and a plan of action for handling exacerbations. It is also crucial to include pulmonary rehabilitation in the treatment of COPD[6]. In the rehabilitation process, the choice of appropriate exercises established while identifying patients in a proper improvement program is crucial. Numerous studies and comprehensive reviews of the literature demonstrate the positive effects of pulmonary rehabilitation on exercise capacity, pulmonary function, muscular strength, and quality of life in people with chronic respiratory disorders[7]. The authors aim to evaluate the challenges faced by each stakeholder in COPD management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations.

Methodology

A survey was conducted during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for COPD management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers & organizations. Each sub-section included four questions with possible answers.

Verbal consent was obtained, study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group. The questions and their options in each questionnaire addressed the documented key challenges of disease management and their possible solutions relevant to the assigned stakeholder group. The participants of each group were required to vote on the most appropriate options as per their clinical experience. The statistical analysis was conducted using SPSS Version 22.0. The qualitative data were presented as frequencies and percentages. SLIDO software[8] was used to present the survey results at the end of the conference.

Results

Of the total, 35 pulmonologists were randomly assigned to each group concerning the challenges faced by each of the four stakeholders. It was observed that 47% of physicians believed that the patients could not comprehend the initial symptoms as signs of a major disease and fear developing the habit of long-term medications. 50% of participants reported that for disease education and better compliance, training on the use of inhalers, smoking cessation counseling, and awareness of disease complications should be initiated for better outcomes. Moreover, 64% of physicians perceived that the financial burden of lifelong treatments and disappointments of treatment failure due to poor access to quality or specialized healthcare was the most common implication faced by caregivers while taking care of COPD patients. Among the challenges faced by healthcare providers, 50% reported that the inappropriate use of investigations for diagnosis caused delayed or underdiagnoses of COPD. Regarding routine clinical practice, 71% believed that the healthcare providers mostly prefer Long acting beta agonist (LABA) + inhaled corticosteroid (ICS) regimen to reduce exacerbations. Moreover, the preferred choice of bronchodilators for immediate symptom relief was Short-acting β2-agonist (SABA). Lack of knowledge among GPs to identify high-risk patients and their referrals was determined as the leading COPD referral-related challenge in developing countries. Around 80% believed that costs due to exacerbations and repeated ER visits account for a significant portion of annual healthcare budgets. They also believed that responsible healthcare authorities must limit access to cigarettes/prohibit their sale, or make policy decisions to increase taxes to prevent our generations from smoking.

Discussion

COPD is a progressive disease with recurrent exacerbations, which ultimately leads to a severely impaired quality of life. Since the development of strategies in the management of the disease itself has been mostly static, more attention should be paid to improving the patient's quality of life. According to a survey of outpatients with COPD, higher episodes of dyspnea significantly correlate with low health-related quality of life[9]. We found that patients suffer due to a lack of knowledge among GPs, a major challenge in developing countries, consistent with published literature[10,11].

A poorer quality of life was also linked to more severe disease. Studies have examined the role of self-management in enhancing COPD patients' quality of life. In this study, participants reported that COPD is progressive; however, good treatment compliance and quality home care will slow the progression and improve the quality of life. Recent research has proved that disease-specific self-management in COPD patients improves health status and lowers overall hospital admissions. The continuum of care must include health education programs focusing on behavior change. Self-management boosts the patients' knowledge and skills needed to control their illness[12]. A systematic review by Bentsen et al. revealed that self-management strategies improve COPD patients' overall health[13]. Consistently, in the present study, 39% of physicians believed that enabling patient self-management could improve the patient's compliance, while 50% promoted the training of inhalers/medications use. Among the non-pharmacological approaches of self-management, smoking cessation was considered the most effective method for preventing and controlling disease progression.

In addition to smoking cessation, pulmonary rehabilitation was suggested as the effective non-pharmacological self-management approach for COPD patients to slow down the disease progression. Recent

Table 1: Responses obtained from the healthcare providers for COPD management.

Questions	Responses	%
Patients		
What are the most crucial patient-related barriers leading to the adversities of COPD?	Unable to comprehend the initial symptoms as a sign of a major disease	47
	Fear of developing the habit of long-term medications	47
	Considering it a part of aging or smoking habits and not consulting the physician	37
	Self-medication, considering it seasonal flu or mild chest infection	21
What should be emphasized in the patients of COPD for their disease education and better compliance?	Training on the use of inhalers/medications	50
	Enabling patient self-management by providing monitoring and documenting tools	39
	Smoking cessation counseling to slow down the progression of the disease	50
	Awareness of disease complications and possible exacerbations due to poor treatment compliance	50
For newly reported COPD patients, conveying a complete drug/smoking/addiction history is difficult because?	The patient is reluctant to share information due to fear of being judged	47
	Fear of forced smoking cessation	42
	Fear of getting diagnosed with a chronic, incurable disease and its negative social impact	47
	Unable to explain the severity and frequency of the symptoms	5
Regarding the non-pharmacological self-management of COPD by the patients, which are the easiest and most effective ways recommended to all the patients in order to slow down the progression of the disease, in your opinion?	Physical exercise	26
	Pulmonary rehabilitation	63
	Smoking cessation	68
	Flu, COVID 19 and pneumococcal vaccinations	37
Family & Caretakers		
From the caregivers' perspective, what are the most common implications they face while caring for COPD patients?	Unable to socialize properly due to constant caregiving of their dependent patients	20
	More prone to psychological disorders	20
	Professional shortcomings due to unpredictable patient care	12
	Financial burden of lifelong treatments and disappointments of treatment failure due to poor access to quality or specialized healthcare	64
What are the essential measures that caregivers should take in order to efficiently support their COPD patients?	Encourage smoking cessation	60
	Avoid passive smoking and provide healthy air quality at home to slow down the disease progression and avoid any chances of exacerbations	40
	Be aware of the situations that can trigger exacerbations and must know how to handle them initially before proper medical care is provided	60
	Focus on providing a healthy diet to the patient	16
Which are the most important instructions that physicians must convey to the caretakers of dependent COPD patients?	COPD is a progressive disease; however, good treatment compliance and quality home care will slow the progression and improve the quality of life	96
	COPD can cause frequent infections and episodes of acute symptoms	20
	Must keep strong follow-ups with the primary physician as advised in order to get the treatment titrated timely	40
	Mental stress and poor diet can increase the disease progression	12
Regarding palliative care of COPD patients, what should be the primary concerns of the caregivers, and which of the following is the most advised and recommended remedy?	Balanced nutritional support has been shown to improve the strength and function of respiratory muscles	44
	Mind-body interventions not only treat disease-related depression and anxiety but also improve the physical status like lung functions, exercise capacity, and fatigue	40
	Fans blowing air into the face have been shown to relieve breathlessness to some extent	8
	Pulmonary rehabilitation, acupuncture, and acupressure are non-pharmacological interventions that can be regularly used to avoid or reduce breathlessness and improve quality of life	52
Healthcare Professionals		
What could the reasons be behind delayed or underdiagnoses of COPD?	Physicians focus solely on smokers	46
	Inappropriate use of investigations for diagnosis	50

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	Use of domestic remedies during the initial course of disease without a diagnosis	39
	Disregard/nihilism for treatment effectiveness	7
For reduction in exacerbations, which regimen is most preferred?	LABA monotherapy	4
	LABA + ICS	71
	LABA + LAMA	39
	LAMA monotherapy	7
What is the physicians' perception regarding the regular use of oral glucocorticoids or corticosteroids in COPD?	Very beneficial in reducing exacerbations	54
	There are no clinical benefits	0
	Can increase the risk of repeated pneumonia in patients with severe disease	46
	Provide good anti-inflammatory benefits	18
What is the most preferred choice of bronchodilators for immediate symptom relief?	SABA	54
	SAMA	4
	SABA + SAMA	36
	ICS	21
Should the long-term use of Azithromycin and Erythromycin be considered for a reduction in exacerbations in spite of the increased risk of bacterial resistance?	Yes	68
	No	32
Healthcare policymakers & organizations		
What could be the major culprit/s behind the high prevalence and mortality rate of COPD in Low and middle-income countries?	Uncontrolled industrial air pollution	15
	Patients' poor access to healthcare and affordable medications	35
	Smoking and household pollution	65
	Undermining the disease progression by physicians and patients	10
What are the major challenges of COPD referrals in developing countries leading to delayed access to diagnosis and treatment, causing early mortalities?	Lack of knowledge among GPs to identify high-risk patients and refer them to the specialists	70
	Lack of pulmonologists in the community, especially in remote rural areas	30
	Lack of screening methods, communication, and coordination with specialists	45
	Treatment attempts for alternate diagnoses due to similar and atypical clinical presentation of the disease	20
How can responsible healthcare authorities prevent our generations from smoking?	Limiting access to cigarettes/prohibition of their sale or Policy decisions to increase tax	70
	Setting up smoking cessation units in every tertiary and secondary care hospital	35
	Increasing awareness about health risks from smoking with practical and safer alternatives for smoking cessation	65
	Allowing smoking in designated areas only to avoid the risks associated with passive smoking	10
According to the GOLD report in 2022, COPD is still a leading cause of death globally and accounts for a significant portion of annual healthcare budgets. This economic burden is mainly due to the following:	High ambulatory oxygen costs	10
	Hospitalizations and palliative hospice care costs	50
	Drugs costs	10
	Costs due to exacerbations and repeated ER visits	80

Long acting beta agonist (LABA); Short-acting β2-agonist (SABA); inhaled corticosteroid (ICS); long-acting muscarinic antagonist (LAMA); short-acting muscarinic antagonist (SAMA); Chronic Obstructive Pulmonary Disease (COPD); corona virus disease (COVID).

data unambiguously demonstrates the advantages of pulmonary rehabilitation, and its inclusion in the management of COPD by primary care doctors may rise by educating all the stakeholders about its elements and advantages[14]. Xu and colleagues[15] researched modified pulmonary rehabilitation effects on individuals with moderate to severe COPD. For 12 weeks, the patients of the interventional group received traditional therapy, nursing care, and modified pulmonary rehabilitation. While the control group, on the other hand, received standard care and training in pursed-lip breathing, nursing, and abdominal breathing. It was found that the patient's pulmonary rehabilitation had significantly improved physical abilities and dyspnea episodes.

As costs due to exacerbations and repeated ER visits accounted for most of the economic burden on the annual healthcare budgets, limiting access to cigarettes or policy decisions to increase tax was perceived as the principal action that should be taken by the healthcare

authorities in order to prevent our generations from this illness and its associated consequences. Price hikes on tobacco products are one of the most efficient ways to reduce cigarette smoking, according to the World Health Organization[16]. A multitude of actual data backs up this claim[17-19].

Although the study findings are based on a small sample size, the perspective is obtained from clinicians of diverse healthcare facilities. Hence this pilot project collectively highlighted the challenges faced by the major stakeholders related to COPD management as per the perception of participant pulmonologists/physicians.

Conclusion

In conclusion following key points were identified from this physician-based survey 1) Lack of awareness and education among patients and their caregivers, 2) Smoking cessation and pulmonary rehabilitation was perceived as the easiest and most effective non-pharmacological self-management ways to prevent disease progression. 3) For reduction in exacerbations, LABA + ICS is the most preferred regimen. 4) Oral glucocorticoids or corticosteroids are beneficial in reducing exacerbations, as per the physicians' perception in LMICs. 5) SABA is the most preferred choice of bronchodilators for immediate symptom relief in developing countries. 6) Long-term use of Azithromycin and Erythromycin be considered for a reduction in exacerbations. 7) Lack of knowledge among GPs is the major challenge of COPD referrals in developing countries. 8) Limiting access to cigarettes/prohibition of their sale or Policy decisions to increase tax to prevent smoking.

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MESSAGES

Dr. George Nyale

Idiopathic pulmonary Fibrosis is a rare lung disease of uncertain origin but which causes progressive decline in lung function resulting in worsening shortness of breath. Its incidence has been increasing worldwide though the prevalence remains low. The diagnosis of this disease is first usually suggested after a high resolution chest CT scan to evaluate the lung. Good quality chest imaging has reduced the need to get lung tissue for diagnosis. Doctors' continuous medical education has improved doctors' awareness and knowledge of this disease

Most patients get to pulmonologists or centre that can handle the diseases late when the lung function has severely deteriorated and trail of any advanced therapies has limited impact. The development of good and early referral systems would be very helpful to patients with this disease. Also patient care pathways need to be developed with a local input to guide care and facilitate supportive treatment including providing home oxygen. It is also important for each country to set up local disease registries than collect data on patients with this disease and facilitate research with a view of developing a cure for this relentless pulmonary disease.

I thank Getz Pharma for arranging the IRF series and developing these commentaries of the consensus developed during IRF 2022 via polls that have tried to address the yawning gaps and challenges in the care and treatment of IPF specifically in many middle and low income countries.

MESSAGES

Dr. Stefanni Nonna M. Paraguas

Indeed, the diagnosis of Idiopathic pulmonary fibrosis (IPF) is challenging and is based on a complete and thorough history, clinical symptomatology and diagnostic workups.

It's hoped that the figures discussed regarding the disease will be improved by the availability of new treatments to slow the disease's progression.

I believe the success of this initiative is not dependent on just one group but rather on considering the different stakeholders. In the Philippines, we have started our registry for IPF patients and raised awareness through lectures initiated by medical professional societies such as the Philippine College of Chest Physicians. We have shared discussions with pharmaceutical industries to help with the availability of treatment for diagnosed patients.

It is essential to monitor diagnosed patients proactively to identify disease progression, worsening symptoms, and oxygenation to detect, and appropriately manage co-morbidities/complications. We need to optimize strategies for addressing quality of life, including treatment of comorbidities, physical activity, emotional well-being, and palliation of symptoms.

Lastly, I believe it is also important and our responsibility to raise awareness about IPF among patients, healthcare professionals (HCPs) and the general public.

Thank you to Getz Pharma for the opportunity where we have been able to raise awareness regarding the burning issues related to IPF and its management. These publications of the consensus developed during IRF 2022 would help us communicate the common challenges faced by all the stakeholders of IPF disease management especially in the low-middle-income countries.

MESSAGES

Dr. Shereen Khan

Idiopathic Pulmonary Fibrosis (IPF) is a rising respiratory problem both in underdeveloped and developed countries however it poses additional problems in underdeveloped (low and middle-income) countries in terms of management, cost and further research. Despite so much advancement in medicine and drug development, the world is still awaiting some disease-modifying or disease-limiting drugs for the optimum management of IPF. Lack of public awareness regarding the disease, its management and the associated misconceptions further worsens the scenario.

Getz Pharmaceutical is doing a tremendous job by arranging the ''International Respiratory Forum IRF'' in order to educate physicians and also to share the experiences between experts from different countries. During IRF 2022, the IPF Symposium held at Ho Chi Minh City was an excellent effort to educate healthcare professionals and to conduct a survey to evaluate the perceptions and challenges associated with the appropriate management of IPF. Identification of such factors will surely lead to steps for the solution of the problems and by publishing the consensus, we can extend this information to a larger pool of healthcare professionals.

I am thankful to Getz Pharma for giving me the opportunity to be part of this great activity and wish the team lot of success in future endeavors.

COMMENTARY NO. 4

Challenges in Idiopathic Pulmonary Fibrosis Management

Abstract

Objective: The authors aim to evaluate the challenges faced by each stakeholder for Idiopathic pulmonary fibrosis (IPF) management, including the patients, their families/caretakers, Healthcare professionals, and Healthcare policymakers and organizations in Low-middle income countries (LMICs) as perceived by 140 pulmonologists from 11 countries who participated in International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam.

Methodology: A predesigned structured questionnaire was developed about challenges faced by each stakeholder for IPF management. Study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group.

Results: It was observed that the physicians greatly supported the psychological well-being of the patients/caregivers and awareness among Healthcare professionals (HCPs) for timely referrals and diagnosis. The caregivers must support the patients to keep their willpower intact. The availability of only those therapies with modest treatment outcomes with no benefits in halting the disease or reducing mortality and the absence of disease-modifying drugs was considered the major challenge faced by Pulmonologists. Patient affordability was considered the key hindering factor affecting High-Resolution Computed Tomography (HRCT) utilization. The development of Interstitial lung disease (ILD) national registries to keep track of disease prevalence and challenges at hand was defined as the urgent healthcare initiatives that need to be taken by the concerned healthcare policymaking authorities. Moreover, the healthcare systems considered comprehensive patient education about disease management and outcomes the most effective self-management strategy to be incorporated and disseminated. Although a small number of patients with ILDs, specifically IPF, receive a prompt and accurate diagnosis, the survey found that protracted delays, frequent misdiagnoses, exposure to expensive and invasive diagnostic procedures, and significant use of healthcare resources mark the more typical diagnostic experience for those with ILD.

Conclusion: These findings indicate the requirement for novel diagnostic tools, best clinical practices, and HCPs training to improve the accuracy of diagnoses in ILD patients.

Keywords: Idiopathic Pulmonary Fibrosis, Management, Challenges.

Introduction

Idiopathic pulmonary fibrosis (IPF) is a progressive interstitial pneumonia with fibrosing that has no known etiology. It only affects the lungs and is linked to specific (evidence of patchy lung parenchyma involvement) changes[1]. The disease has a poor prognosis, with a median survival time of 2 to 3 years from the time of diagnosis in retrospective longitudinal investigations. IPF can be difficult to diagnose in daily practice, and there is frequently a long lag between the disease's initial symptoms, typically a combination of Dry cough and dyspnea with exertion: the definitive diagnosis. Furthermore, a sizable fraction of cases do not achieve a sufficient diagnostic confidence level on the radiologic investigation, necessitating invasive lung biopsy procedures. Disease management is also difficult[2] and frustrating to patients, caregivers, and doctors.

It is suggested that early patient referral to facilities with specialized knowledge and prompt diagnosis could result in more effective disease care[3]. Patients would benefit from early diagnosis regarding adequate illness information, prompt referral for lung transplantation, avoidance of inappropriate medications (such as steroids and immunosuppressive drugs), and enrollment in clinical trials[3,4]. However, Early IPF symptoms are frequently modest, and ILD screening efforts are restricted to people with recognized risk factors or a family history of IPF[5].

The challenge is to lessen the uncertainty of the diagnosis. Experts have suggested that early referral to a specialty centre can be beneficial in cases where IPF is recognized or suspected, like unexplained dyspnoea[6]. The diagnosis of IPF necessitates close-fitting coordination between clinicians, radiologists, and pathologists skilled in ILD; this is especially important when the radiologic and histopathologic patterns are at odds. It has been revealed in many surveys that only dedicated centers with high-volume ILD programmes can offer multidisciplinary specialist clinics and coordinated services[7]. Participation in a clinical trial may also be made possible through referral to facilities with competence.

IPF management has numerous difficulties; current recommendations support lung transplantation and enrollment in a clinical study as treatment alternatives[8]. The number of medicines being tested for IPF has dramatically increased over the last ten years due to an improved understanding of the pathobiology of the disease[9]. Although there are risks associated with clinical trial participation, particularly those related to the drug being tested, this choice gives patients a chance to take an active role in their healthcare, access novel, possibly helpful treatments, and receive professional medical care at the best hospitals.

One specific challenge is several unmet medical requirements for caregivers of pulmonary fibrosis patients, including disease information, symptom management, financial aid, access to specialty facilities, advanced care planning, and psychological support. Comprehensive support adapted as the condition progresses the load on the caregiver[10].

The overall purpose of this survey was to address the unmet need for information, challenges to make assured diagnosis desired by healthcare professionals who assess and treat people with IPF, to explore social support systems for patients and the people who care for them in this progressive disease and what their lives will be like as it progresses relentlessly. And finally, to share suggestions that policymakers in low-income countries can adopt in the face of this rising challenge.

Methodology

A survey was conducted during the International Respiratory Forum conference 2022 in Ho Chi Minh City, Vietnam. A total of 140 pulmonologists from 11 countries participated in the study. A predesigned structured questionnaire was developed pertaining to challenges faced by each stakeholder for IPF management, including the patients, their family/caretakers, Healthcare professionals, and Healthcare policymakers and organizations.

Verbal consent was obtained, study participants were randomly divided into four groups, and only one section of the questionnaire was distributed among the participants of each group. The questions and their options in each questionnaire addressed the documented key challenges of disease management and their possible solutions relevant to the assigned stakeholder group. The participants of each group were supposed to vote on the most relevant options as per their clinical experience.

For statistical treatment, the data analysis was conducted using SPSS Version 22.0. The quantitative data were presented as frequencies and percentages. SLIDO software[11] was used to present the survey results at the end of the conference.

Results

As perceived by the enrolled healthcare providers, among the dilemmas an IPF patient faces, the major one is the progressive and rapid increase in symptoms like shortness of breath, cough, and fatigue reported by 63% of physicians (Table 1). The second group responding with respect to family and caretakers reported that the caregivers must provide psychological support to keep the patient's willpower intact so they do not disregard self-care. Of the major challenges faced by Pulmonologists today related to ILD is the availability of therapies having modest treatment outcomes with no benefits in halting the disease or reducing mortality and the absence of disease-modifying drugs. Patient affordability was considered the key hindering factor affecting HRCT utilization. The development of ILD national registries to keep track of disease prevalence and challenges at hand was defined as the urgent healthcare initiatives that need to be taken by the concerned healthcare policymaking authorities, as per the opinion of 74% of physicians. Among the effective self-management strategies to be incorporated and disseminated by the healthcare systems, comprehensive patient education was considered as the foundation.

Discussion

Building on the progress in understanding IPF pathobiology, additional research into the function of gene variants, epigenetic changes, and other molecular biomarkers reflecting disease activity and behaviour should support the development of novel agents for personalized treatment of IPF and enable earlier and more certain diagnoses[12,13]. The survey indicated that recommendations that deal with the diagnosis and management of IPF need to be revised in light of the changing understanding regarding the use of HRCT and other techniques. It was also observed that managing patients with IPF is still challenging without efficient pharmaceutical therapy. Updated guidelines and research will need to urge clinicians to refer patients with IPF for clinical studies and include a thorough analysis of the pharmacologic treatments for IPF that are currently on the market.

This study's findings can be considered when creating instructional materials for providers, patients, and

Table 1: Responses obtained from the healthcare providers for challenges in IPF management.

Questions	Responses	%
Patients		
What are the biggest dilemmas a patient of IPF has to face?	Progressive and rapid increase in symptoms like shortness of breath, cough, and fatigue	63
	Definitive treatment is not available; patients usually go on palliative care only	44
	Rapid occurrence of disabilities and poor quality of life	19
	Unable to anticipate the poor prognosis	6
What are the most troubling thoughts that come to an IPF patient's mind when the diagnosis is made, and the disease is explained?	Being dependent and a burden on the family caregivers	44
	Terminal illness leading to early death	38
	Disabilities to perform daily activities, including work	50
	Financial burden due to treatment and other healthcare costs	44
Among the symptoms, chronic breathlessness is the major challenge experienced by IPF patients. Which other most common adversity is linked with it?	Distress due to constant dry cough	38
	Restrictions of daily activities	75
	Diminished hunger	0
	Lack of sleep	6
What measures shall IPF patients take to reduce their dependency on family and caretakers?	Maintain a strong diet to have less effect on the disease	0
	Follow good breathing exercises regularly as a part of pulmonary rehabilitation	38
	Follow up with the primary physician regularly to keep the disease progress in check	31
	Discuss the possible adversities and complications of the disease with the physician, learn self-management strategies and then prepare to deal with them in anticipation	63
Family & Caretakers		
What should be the active role of family and caregivers of IPF patients?	Be actively involved and aware of the treatment options available	42
	Are well-acquainted and encourage patients to follow the self-management strategies	17
	Ensure appropriate diet and pulmonary rehabilitation to avoid or reduce severe symptoms	25
	Support the patient psychologically to keep their willpower intact so that they do not disregard self-care	75
What are the challenges faced by the caretakers of IPF patients to maintain their quality of life?	Work-life balance due to progressively deteriorating health conditions of the patients	50
	Financial constraints and limited accessibility to novel medications	50
	Psychological stress due to the short life expectancy of their patient	58
	Staying disciplined and compliant with the advised treatment and care	8
What are the most important instructions and information to be provided to the caretakers by the treating physicians of their IPF patients?	Limitations of the treatment options available, along with their duration and cost	33
	Symptomatic self-management strategies to reduce the impact of symptoms on the daily life of the patients and their caretakers	33
	Poor prognosis and short survival rates of the disease, especially when the diagnosis is delayed	25
	Importance of good nutritional and psychological support should be emphasized	50
What can be the useful parameters for the caretakers to assess the disease progression so that timely communication with the treating physician could be done for better treatment prognosis?	Frequency of severe breathlessness episodes	67
	Effect of antitussives on the constant cough	0
	Reduction in weight and dietary habits	25
	Any bluish discoloration or paleness of fingers, toes, or around the mouth	50
Healthcare Professionals		
What are the major challenges faced by Pulmonologists today related to ILD?	Less specificity and sensitivity of the diagnostic measures	26
	Current available therapies have modest treatment outcomes with no benefits in halting the disease or reducing the mortality	58
	Delayed referrals leading to advance disease conditions of patients	47
	Difficult to implement the treatment guidelines	16
What are the most concerning dilemmas with the treatment of ILD?	Large number of ILD types and etiology	37
	Poor treatment outcomes due to delay in diagnosis and relevant medical care	53

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	Limited ability to monitor both disease severity and the presence of adverse medication effects	16
	Novel therapies (anti-fibrotic drugs) only slowing the decline in FVC	37
What major challenges with Surgical Lung biopsies lead to delayed diagnosis?	Lack of sufficient availability of Thoracic surgeons	32
	Post-operations risk of exacerbations	32
	High risk of Pneumothorax after the procedure	26
	Invasive procedures are not usually accepted by patients and caregivers	74
HRCT is an integral part of the diagnostic process of ILD. What do you think could be the key hindrances in its appropriate utilization?	Affordability of the patients	53
	Radiological errors by radiologists or obsolete equipment used	16
	Not readily available in the geographic vicinity	26
	Unawareness among physicians regarding the classical radiological features of IPF and how to differentiate them from other differential diagnoses	63
Which type of lung biopsy is usually preferred in your region?	Bronchoalveolar Lavage	21
	Transbronchial Cryo Lung Biopsy	5
	Surgical Lung Biopsy	42
	Transbronchial Biopsy	47
Healthcare Policymakers & Organizations		
What should be the most urgent healthcare initiatives taken by the concerned healthcare policymaking authorities to control the poor prognosis of IPF patients?	Create ILD national registries to keep track of disease prevalence and challenges at hand	74
	Make the diagnostic tools accessible in all tertiary care set-ups for ILD-suspected patients	21
	Make disease-limiting drugs like Anti-fibrotic therapies accessible and affordable to IPF patients	53
	Training programmes for physicians and educating patients along with their caretakers should be initiated in order to eliminate the myths and misconceptions about the etiology, risk factors, diagnosis, and management of IPF	32
Which are the most effective self-management strategies to be incorporated and disseminated by the healthcare systems to ensure patient compliance, considering that the median survival rate of IPF is around 3.8 years?	Comprehensive patient education about the disease progression, diagnostic processes, and possible treatment options and their outcomes	84
	Training the patients regarding pulmonary rehabilitation techniques	37
	Educating the caregivers and their patients about palliative care and its importance in IPF	32
	Psychological and nutritional counseling so that the patients don't give up on themselves too early	26
What is essential in promoting a better quality of life to improve patient outcomes despite limited resources and poor disease prognosis?	Extra efforts by the research and development corporations to find a cure or disease-modifying therapies with better prognosis and easy accessibility	32
	Healthcare policymakers and authorities should focus their emphasis on creating IPF outreach centers to educate, treat and follow up with IPF patients	47
	Healthcare authorities should create local diagnostic, referral, and treatment guidelines for their physicians and pulmonologists to avoid delays in diagnosis and savor the narrow therapeutic window	47
	Diagnostic facilities and their affordability should be ensured for all the suspected patients so that the diagnosis of the specific type of ILD can be made timely	37
Why is there a lack of progress in research and development to counter the healthcare challenges IPF poses globally?	Being a rare and rapidly progressive idiopathic disease, Research and Development on IPF and its treatment is not financially viable for big corporations	63
	Governments try to shrug off the adversities of the disease as their focus is more on other epidemics and common communicable diseases	42
	Developing new biopsy techniques and other non-invasive diagnostic tools can be a very lengthy and expensive because there is a prolonged list of differential diagnoses	11
	Conducting clinical trials on IPF patients can have various ethical barriers like short survival rates due to delayed or misdiagnosis	32

Forced Vital Capacity (FVC); Idiopathic pulmonary fibrosis (IPF); Interstitial lung disease (ILD); High-Resolution Computed Tomography (HRCT)

caregivers. Future studies should examine how these materials affect the provision of care and patient and caregiver satisfaction. As this is the most appropriate method to reach patients and caregivers at the desired level, models for distributing disease-related information/education in a dosed fashion should be

investigated[14]. Research is being done on the disease trajectory and behaviour of IPF, which could be included in this instructional material. Developing comprehensive, patient-centered care models includes knowledge of diseases as a key component.

It is also important to consider the opportunities and challenges associated with diagnosing and managing patients with IPF in LMICs utilizing first-hand experience[15,16]. Additionally, problems like the accessibility of HRCT, spirometry, and a multidisciplinary diagnostic environment must be addressed, even if they wouldn't be a concern in high-income nations[16,17]. Field specialists, healthcare organizations, and financial bodies must collaborate to create sensible and workable solutions to guarantee that IPF patients receive an accurate and timely diagnosis and appropriate access to therapy.

However, people with IPF frequently experience several comorbidities that should be properly diagnosed and treated, as well as various symptoms such as chronic cough and shortness of breath[18]. Therefore, these patients should get comprehensive care that includes non-pharmacological therapies to enhance the health-related quality of life rather than only addressing the progressive deterioration in lung function.

Conclusion

The survey determined that although a small percentage of patients with ILDs, specifically IPF, receive a prompt and accurate diagnosis, the more common diagnostic experience for those with ILD is marked by lengthy delays, frequent misdiagnosis, exposure to expensive and invasive diagnostic procedures, and significant use of healthcare resources. These results point to the need for the development of National ILD registries to keep track of the disease etiology and its challenges, new diagnostic gears, clinical practice standard procedures, more promising disease-modifying drugs, and HCPs education to promote timely referrals and diagnoses in patients with ILD.

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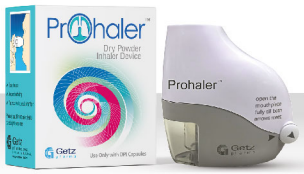

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