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The future is now

Frederico Leon Arrabal Fernandes[1,2,3,a], Suzana Erico Tanni[4,b]

World COPD Day will be held on November 20, 2019. This year's theme is "All Together to End COPD".[1] Participating in this initiative, the JBP publishes this month a special issue with seven articles and three editorials on the topic. It is encouraging to see that various national and international centers do and disseminate their research in this area in our journal. This is further proof that we live at a turning point in COPD care.

We are two months away from 2020. This has great significance for the literature on COPD. Since the article "Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease Study"[2] was published in 1997, we have found in each original article and review article, and even in the Global Initiative for Chronic Obstructive Lung Disease report,[3] that COPD is expected to become the third leading cause of mortality by 2020. The forecasts were optimistic. That mark was reached in 2016.[4] What we see now is an increase in COPD mortality rates because of the aging of the population. However, when adjusted for age, mortality is seen to decrease, which may be due to the reduction in tobacco consumption that has been observed since the late 20th century.

The course of COPD is favorably affected not only by control of risk factors. Over the last 20 years, the reality of treatment has changed. Once an orphan disease, with no specific treatment and whose pharmacotherapy was most often mistakenly derived from that of asthma, COPD can now be managed with a range of new bronchodilators available in different devices, which allows a personalized choice of medication and form of administration.[5]

Personalization depends on identifying the ideal patient for each treatment. Until recently, the choice was based solely on clinical and functional data, such as dyspnea, pulmonary function, and exacerbation rate. Today, blood eosinophil count is emerging as a biomarker, which can predict response to inhaled corticosteroids.[6] It is then possible to prescribe a medication accurately, avoiding prescribing it to those who would only run the risk of side effects, with no benefits.

The pharmacological approach to COPD has improved significantly, allowing critically ill patients to regain their quality of life. We have second-line medications to prevent exacerbations and, increasingly, ways to prevent harmful readmissions, whether with medications[7] or with home noninvasive ventilation.[8] Although no single drug has been shown to have proven benefits in decreasing mortality, we know that the combination of pharmacological and nonpharmacological care results in reduced exacerbation rates, improved pulmonary function, and increased quality of life.

Providing appropriate treatment that impacts the natural history of the disease has led to a paradigm shift. The treatment that is currently used for more advanced stages of COPD is starting to be prescribed for mild COPD, with a decreased rate of decline in FEV_1 due to the use of bronchodilators at earlier stages of the disease.[9] There is also discussion on the diagnosis of early COPD, that is, on how to diagnose the disease before the onset of obstruction as defined by the spirometry criterion of $FEV_1/FVC < 0.70$. Risk factors, CT-detected emphysema, accelerated lung function decline, and FEV_1/FVC ratio below the lower limit of normal appear to be markers of early disease.[10]

Studies into the various stages of COPD have also advanced the understanding of the natural history of the disease. Temporal parametric analysis of lung density on inspiratory and expiratory CT scans has shown that it all begins with impairment of the small airways, with the possibility of progression to emphysema. In addition, large cohort studies have shown that the presence of symptoms is a predictor of future risk of COPD in those who still do not present with respiratory impairment as determined by spirometry, with this risk being associated with increased exacerbation rates.[11,12] These findings helped to correct, in the Global Initiative for Chronic Obstructive Lung Disease report,[3] the historical error that symptoms were not part of the disease definition.

Within a short time, we began to understand COPD better, diagnose it earlier, and treat it both with drugs and with rehabilitation and other nonpharmacological measures. We use biomarkers to personalize treatment and we can choose the appropriate device for each patient. It looks like the future has arrived. And with it, new challenges. It is necessary to decrease underdiagnosis. It has been estimated that more than 75% of people who have COPD have yet to be diagnosed. We need to broaden knowledge of these new concepts among specialists and nonspecialists and, most importantly, to ensure access to appropriate treatment for all patients.

1. Ambulatório de DPOC, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, São Paulo (SP) Brasil.
2. Disciplina de Pneumologia, Instituto do Coração, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, São Paulo (SP) Brasil.
3. Laboratório de Função Pulmonar, Instituto do Câncer do Estado de São Paulo Octavio Frias de Oliveira, São Paulo (SP) Brasil.
4. Departamento de Medicina Interna, Área de Pneumologia, Faculdade de Medicina de Botucatu, Universidade Estadual Paulista – UNESP – Botucatu (SP) Brasil.
a. https://orcid.org/0000-0002-3057-5716; b. https://orcid.org/0000-0002-2587-2759

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