

Pharmacology Update on Chronic Obstructive Pulmonary Disease, Rheumatoid Arthritis, and Major Depression



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KEYWORDS

• COPD • Breo Ellipta • Major depression • Brintellix • Rheumatoid arthritis • Xeljanz

KEY POINTS

- Breo Ellipta is a combination inhaled medication with fluticasone furoate and vilanterol indicated for use in patients with chronic obstructive pulmonary disease or asthma who are refractory to inhaled corticosteroid monotherapy.
- Brintellix (vortioxetine) is an immediate-release tablet for oral administration proven effective against depressive symptoms in both short-term and long-term scenarios.
- Xeljanz (tofacitinib) is the first of a unique class of oral kinase inhibitors to be approved by the Food and Drug Administration for the treatment of rheumatoid arthritis.

INTRODUCTION

Health care is a dynamic entity that is ever evolving. Chronic obstructive pulmonary disease (COPD), rheumatoid arthritis (RA), and major depression disorder (MDD) are frequently seen in primary care for treatment or as comorbidity to other health care issues. Although specialists may treat these disorders, it is important for the nurse practitioner (NP) to be familiar with new and current therapies that may affect other treatment plans. In addition, the NP must be knowledgeable and able to provide education on available therapies that patients inquire about. This is especially important

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because use of the Internet, friends, or advertisements may leave the patient with inaccurate information. The purpose of this article is to review selected new pharmacologic treatments for COPD, MDD, and RA.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

The prevalence of COPD is steadily increasing despite leveling in Europe.¹ Previously considered a single disease, today COPD is defined as a broad syndrome that is not fully reversible.^{2,3} This long-term lung disease, characterized by breathlessness, cough, and sputum production, limits activity and reduces the quality of life while increasing the incidence of premature death.⁴ The World Health Organization reports that in 2012, more than 3 million people, or 6% of all deaths globally, are attributable to COPD.⁵

As the name implies, airway obstruction occurs and limits expiratory flow, resulting in air trapping, lung hyperinflation, and dyspnea. Pulmonary medications for COPD aim to decrease bronchial smooth muscle contraction, bronchial mucosal congestion and edema, airway inflammation, and secretions, thereby improving quality of life, slowing decline, and treating or preventing exacerbations.^{6,7} In keeping with international recommendations, the severity of airway obstruction is based on the level of forced expiratory volume in 1 second percentage (FEV₁%) predicted (**Table 1**).⁸

Patients with mild disease may respond to an inhaled short-acting beta agonist, for example, salbutamol or terbutaline, or a short-acting muscarinic antagonist, for example, ipratropium, to treat breathless and/or improve exercise limitation.⁴ Although effective, beta-agonists have uncomfortable side effects of tremor and tachycardia. Anticholinergic agents improve FEV₁ and reduce exacerbations.⁶ Salbutamol has a faster onset of action, approximately 5 minutes compared with 30 to 60 minutes for ipratropium.^{4,6}

The primary goal of pharmacologic treatment is to dilate the airways. Bronchodilators relieve breathlessness and are the cornerstone of treatment for patients with COPD. In mild-to-moderate patients (FEV₁ ≥50% predicted) who are symptomatic or experience exacerbations, a long-acting beta2 agonist (LABA), for example, salmeterol or indacaterol, or a long-acting muscarinic antagonist, for example, tiotropium or glycopyrronium bromide, may be prescribed.^{4,7}

Participants whose FEV₁ is less than 50% predicted may respond well to combination therapies of LABA/inhaled corticosteroids (ICS). Trials provide evidence that combination therapy improves quality of life and benefits lung function.^{7,9} The National Institute for Health and Clinical Excellence provides an excellent decision model for treating COPD.¹⁰ The Global Initiative for COPD also developed guidelines and

Table 1
2010 National Institute for Clinical Excellence guideline grading of severity of airflow obstruction

Severity	FEV ₁ % Predicted
Stage 1—mild	≥80 ^a
Stage 2—moderate	50–79
Stage 3—severe 30–49	30–49
Stage 4—very severe	<30 ^b

Abbreviation: FEV₁, forced expiratory volume in 1 second.

^a Symptoms should be present to diagnose chronic obstructive pulmonary disease in people with mild airflow obstruction.

^b Or FEV₁ less than 50% with respiratory failure.

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