

it acts as an effective muscle relaxant by blocking acetylcholine release and thus paralyzing the muscle. The most common use of Botox Cosmetic is to reduce wrinkles associated with aging. Botox is used to treat chronic migraines, limb spasticity, abnormal head position and neck pain (cervical dystonia), severe underarm sweating, and certain eye muscle problems. In some situations, once the muscle is paralyzed, the patient can perform strengthening exercises to promote strength in other muscles to correct, for example, abnormal head position. This treatment reaches maximum effectiveness within 6 weeks and must be repeated every 3 to 6 months. Because botulinum toxin causes pain, it is usually administered with a local anesthetic.

Other muscle disorders that require medication include myasthenia gravis and fibromyalgia. Myasthenia gravis is a progressive, autoimmune disease of skeletal muscle fatigue and weakness that is caused by loss of acetylcholine receptors, basically a breakdown in communication between the nerves and the muscles. It can be debilitating. One type of medication for this disease consists of cholinesterase inhibitors, such as neostigmine, which block cholinesterase and therefore facilitate acetylcholine accumulation. Although the disease has no cure, treatment can help reduce symptoms to allow the individual to function more independently.

Fibromyalgia is a disorder of chronic pain in muscles and the soft tissue surrounding joints. This rheumatological illness is difficult to manage. Treatment includes decreasing the contributory factors (e.g., lack of exercise, poor coping response to stress), physical therapy, antidepressants, anti-inflammatory medications, trigger point injections, and narcotic analgesics.

■ MEDICATIONS USED TO TREAT ABNORMAL CALCIUM LEVELS

When calcium levels are low, supplements may be needed to correct the imbalance. Calcium supplements are prescribed for **hypocalcemia**, or low blood calcium. Vitamin D may be added to facilitate calcium usage. Vitamin D assists in the absorption of calcium from the stomach and helps to maintain adequate serum calcium levels for proper bone development. Risk factors for hypocalcemia include smoking, lack of exercise, high alcohol consumption, anorexia nervosa, estrogen or testosterone deficiency, poor nutrition, and obesity. Patients with hypocalcemia may be given calcitonin (Miacalcin), which is available as a nasal spray or in an injectable form. Calcitonin is naturally produced by the thyroid gland to deposit calcium into bones. Calcitonin can come from humans or fish such as salmon.

When there is a lack of calcium, the bones can become soft, brittle, and deformed. This condition is known as **osteomalacia** in adults or rickets in children. **Osteoporosis** is a common bone disease that also results from a lack of calcium in the body; this disease creates holes in the bones and gives bone a spongelike appearance. In all cases, the bones are not firm, and they break easily, even under little

Drug Spotlight 12-1 *Lyrica (pregabalin)*

Classification	Analgesics, anticonvulsants
Availability	Capsules, oral solution
Indications	Used for the treatment of fibromyalgia, shingles pain, and diabetic neuropathy pain
Action	Interrupts pain signals from the brain
Adverse Reactions/ Side Effects	May cause suicidal thoughts in a few patients. Risk for hypersensitivity reaction in patients taking ACE inhibitors. May cause edema of hands, feet, and legs; dizziness or sleepiness
Contraindications/ Precautions	Avoid abruptly stopping the medication unless discussed with the prescriber because symptoms may worsen