ment is unclear. Research suggests that antioxidants may prevent the progression of OA. Vitamin C is an antioxidant necessary for collagen synthesis, and some literature suggests that increased vitamin C intake (> 152 mg/day) produces a threefold decreased risk of OA progression. An analysis of Framingham data revealed that the risk of OA progression is three times higher in patients with low vitamin D intake, but vitamin D intake does not decrease the risk for OA.

Glucosamine and chondroitin have been used since the 1960s for OA therapy. Radioisotope studies of glucosamine show that it is rapidly distributed and demonstrates selective uptake by articular cartilage. The effect of chondroitin is less clear, but it seems to increase proteoglycans and collagens. A meta-analysis of nutraceutical research concluded that these two substances are moderately effective in the treatment of OA. The products are safe, but more independent studies are needed.

Because nutraceuticals are not evaluated or monitored by the Food & Drug Administration (FDA), effectiveness can vary among manufacturers. Follow blood sugar levels more closely when initiating glucosamine in elders with diabetes, since it is an amino sugar and may elevate blood sugar.

Few randomized clinical studies have demonstrated that heat and cold therapy are effective in OA. Moist heat is known to raise the pain threshold, produce analgesia via action on free nerve endings, and decrease muscle spasm. Heat may be delivered via heat packs, heating pads, hydrotherapy and paraffin wax baths. Exercise caution when prescribing these for older adults, who may have diminished sensation and are thus at risk for burns. A new product on the market is Therma Care, an air-activated heat wrap. The device can be placed on the neck, back, abdomen or other affected area and stay very warm for 8 to 12 hours.

Cold therapy also decreases muscle spasm, reduces swelling and increases pain threshold. Patients with Raynaud’s phenomenon or cold hypersensitivity should not use cold packs, however.

Capsaicin is an over-the-counter rubifacient frequently used for OA. Capsaicin is an ingredient from hot chili peppers that releases substance P, a neurotransmitter, from the unmyelinated C fibers. Substance P then rapidly depletes, and pain transmission moves from the C fibers to higher neurologic centers. One randomized, double-blind study documented a 33% or less reduction in OA knee pain compared with placebo. In the study, subjects applied capsaicin q.i.d., which is an expensive regimen. Patients must wear rubber gloves for application, so that the capsaicin does not burn the fingers.

Therapeutic touch and acupuncture are other modalities to consider when treating recalcitrant pain in some elderly patients with OA. These treatments can be useful as adjunctive therapy.

Pharmacologic Therapy for OA

Today’s pharmacologic options include systemic oral agents such as acetaminophen and anti-inflammatory agents such as the nonsteroidal anti-inflammatory drugs (NSAIDs). Adjuvant agents include tricyclic antidepressants, antispasmodics, hormones and steroids. Intra-articular therapy with corticosteroids may be useful for synovial inflammation, but remove any effusion prior to injection. Researchers have recently focused attention on synthetic and naturally occurring hyaluronan derivatives as a possible treatment for OA. These substances are approved only for knee OA right now, but studies are ongoing for use in hips and shoulders. One study of adults older than 60 with moderate to severe OA symptoms documented statistically significant improvement over placebo (p = .04) at 5 weeks and at 4 months.

Some studies show that acetaminophen is as effective as ibuprofen in treating OA symptoms. It is safer than ibuprofen in older adults because of NSAIDs’ deleterious effects.