Osteoarthritis (OA) is a common condition that causes significant morbidity. The average family doctor can become overwhelmed by both the number of people in their practice with this condition and frustrated with what seems to be a paucity of treatment options available to offer those who suffer from OA.

Over the last few years there has been considerable research into some alternative treatments for OA; with some options having significant and favourable outcomes. These treatments are finding their way into the common and accepted ways to treat OA.

Explaining OA...

OA is not a natural consequence of aging. Although the prevalence of OA increases with age and is the major rheumatologic condition found in the elderly, there are significant differences in the physiologic makeup of the aged joint and the joint that has osteoarthritic changes (Table 1).

Classic features of OA include insidious onset, mechanical pain, bony enlargement (late stages), decreased range of motion and morning stiffness (less than 30 minutes). Inflammatory changes are not a major manifestation of OA. The etiology of OA is unknown, but risk factors (Table 2) have been identified.

Non-pharmacologic treatment should be included in any program offered to patients. These options include:

- patient education,
- weight loss programs,
- physiotherapy,
- thermal modalities (heat or ice),
- training in tools (e.g., cane) that aid in mobility/function,
- exercise and
- occupational therapy.\(^1,2\)

Olivia’s OA

- Olivia, 65, has osteoarthritis of the right knee. When she first presented, acetaminophen was effective, but over time it has not been helping.
- Non-steroidal anti-inflammatory drugs (NSAIDs) are contraindicated because of an NSAID-induced gastrointestinal bleed she had 10 years ago.
- She meets the criteria for knee replacement in your health region. You are hesitant to start narcotic medications and wonder about other alternatives for the pain your patient is having.

How would you treat Olivia? For the answer, go to page 69.
Surgical interventions include joint replacement and arthroscopy aimed at debriding joints so that they can be made as functional as possible.

The standard pharmacologic armamentarium includes acetaminophen, salicylates, non-steroidal anti-inflammatory drugs (NSAIDs) and narcotics. Options available to doctors have been complicated by the recent issues around cyclooxygenase (COX)-2 inhibitors. These medications are the usual part of the standard step-wise protocols well-known to all physicians.3

“Other” options...

Other treatment options that are gaining more and more prominence are available to physicians. Because the knee is the most weight-bearing joint, it is the joint that receives the most research attention.

1. Glucosamine/chondroiten:

Although there is some concern about the long-term benefits (and costs) of glucosamine, a Cochrane collaboration, which included 13 random, controlled trials (RCTs) that compared glucosamine against placebo and two RCTs against NSAIDs, glucosamine was found to be superior. In two other RCTs, glucosamine was found to be as effective as NSAIDs. There is still some controversy about the true impact of glucosamine, but this appears to be a somewhat validated option in the care of the patient with OA. Further, there is some evidence that glucosamine plus chondroitin sulfate (plus manganese ascorbate) is effective in mild to moderate disease.4

2. Topical NSAID and topical capsaicin NSAID:

A recent Canadian study revealed that topical NSAID use (diclofenac) relieved knee pain without major systemic effects. Some practice guidelines advocate for the use of topical NSAID therapy.4,5 So, there is some evidence that topical capsaicin relieves osteoarthritic pain.3

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Table 1
Differences between aging and osteoarthritis

<table>
<thead>
<tr>
<th>Aging</th>
<th>Osteoarthritis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased cartilage hydration</td>
<td>Increased cartilage hydration</td>
</tr>
<tr>
<td>Proteoglycans</td>
<td>Proteoglycans</td>
</tr>
<tr>
<td>• Normal quality</td>
<td>• Decreased quantity</td>
</tr>
<tr>
<td>• Small size</td>
<td>• Smaller size</td>
</tr>
<tr>
<td>Collagen</td>
<td>Collagen</td>
</tr>
<tr>
<td>• Normal quantity</td>
<td>• Decreased quantity</td>
</tr>
<tr>
<td>• Increased stiffness</td>
<td>• Increased stiffness</td>
</tr>
<tr>
<td>• Increased crosslinking</td>
<td>• Cross links lost during degradation</td>
</tr>
<tr>
<td>Chronodrocytes</td>
<td>Chronodrocytes</td>
</tr>
<tr>
<td>• No or reduced proliferation</td>
<td>• Increased proliferation</td>
</tr>
<tr>
<td>• No change in overall metabolic activity</td>
<td>• Increased metabolic activity</td>
</tr>
<tr>
<td>No change in subchondral bone</td>
<td>Increased subchondral bone thickness</td>
</tr>
</tbody>
</table>

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The use of intra-articular steroids has shown a benefit in OA. The evidence (studied in the knee) showed pain is relieved one week post-injection and can last for three to four weeks after. The joint should not be injected more than once every three months.6

Low molecular weight HA (e.g., sodium hyaluronate) has inconclusive research around its efficacy; whereas, high molecular weight HA has more conclusive evidence of its usefulness in treating OA pain. In the latter case, pain relief was obtained on average after four (and up to 12) weeks and could last up to one year.7

An interesting article published in the British Medical Journal reported that acupuncture plus oral diclofenac is more effective than “placebo” acupuncture (inappropriately applied acupuncture) and diclofenac for symptomatic treatment of the knee.8

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4. Intra-articular hyaluronic acid (HA):

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5. Acupuncture:

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Wrapping up...

Acetaminophen remains the mainstay of pharmacologic treatment of OA. Consideration must be given to non-pharmacologic treatment options. However, given the above evidence, there appears to be a place for the combination of intra-articular injections of steroid and high molecular weight HA.

Given, as well, the recent controversy about COX-2 inhibitors and the significant high side-effect profile of NSAIDs, generally these other modalities should take more and more prominence in the treatment options offered to patients by family doctors.