

Comparing Antiinflammatory Drugs After Total Hip Replacement

Antiinflammatory medications are used after a total hip replacement to prevent a complication called heterotopic ossification (HO). HO is the formation of bone in the soft tissues around the joint. This postoperative problem causes pain and stiffness -- the very symptoms a joint replacement is supposed to eliminate!

No one knows for sure why some patients (quite a few actually) end up with heterotopic ossification after a hip replacement. Some experts think that trauma to the muscles or bone sets up a response that results in new bone formation in these tissues.

Studies show that one fourth (25 per cent) up to almost half of all patients develop heterotopic ossification (HO). That raises the question of if so many people develop HO, why doesn't everyone?

It seems that patients with certain risk factors are the most likely to develop HO. Those risk factors include male sex and age older than 60 years. A past history of another bone condition called ankylosing spondylitis or a past history of HO in either hip also increases the risk.

Until we know for sure what triggers this response and how to avoid it, there are two preventive techniques that seem to help. One is to radiate the tissues but that might increase the risk of cancer. So the use of nonsteroidal antiinflammatory drugs (NSAIDs) is the front runner prophylactic (preventive) treatment.

But antiinflammatory medications don't come without their own unique set of potential problems. Standard nonsteroidal antiinflammatory drugs (NSAIDs) are known to cause gastrointestinal side effects (e.g., nausea, vomiting, bleeding). A newer line of NSAIDs called COX-2 inhibitors have fewer side effects but how effective are they in preventing heterotopic ossification?

A review of the recent studies suggests that standard NSAIDs and the newer COX-2 inhibitors are equally effective in preventing heterotopic ossification. Bleeding is not as likely with COX-2 inhibitors as it is with standard NSAIDs. However, the risk of high blood pressure is greater with COX-2s.

In the case of heterotopic ossification prophylaxis after hip replacement, the short amount of time COX-2s are used may keep patients from experiencing adverse effects from the drug.

Only a small number of studies are available to judge the use of NSAIDs versus COX-2 inhibitors for the prevention of heterotopic ossification. More studies with larger numbers of patients are needed to answer the question of which is better. Ultimately, determining the cause of heterotopic ossification and preventing it without the use of radiation or medications with their potential negative side effects is the goal.

Reference: Goerge I. Vasileiadis, MD, PhD, et al. COX-2 Inhibitors for the Prevention of Heterotopic Ossification After THA. In *Orthopedics*. June 2011. Vol. 34. No. 6. Pp. 467-472.