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Title **Celecoxib for the Treatment of Pain in Osteoarthritis and Rheumatoid Arthritis**

Agency **AHFMR, Alberta Heritage Foundation for Medical Research**
Health Technology Assessment Unit, Suite 1500, 10104-103 Avenue NW, Edmonton, Alberta T5J 4A7, Canada; Tel: 1 780 423 5727, Fax: 1 780 429 3509; www.ahfmr.ab.ca

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Aim

To determine the efficacy/effectiveness and safety of the selective cyclo-oxygenase-2 (COX-2) inhibitor celecoxib (Celebrex) for treating pain in patients with osteoarthritis (OA) and rheumatoid arthritis (RA).

Conclusions and results

Two meta-analyses of randomized controlled trials (RCTs) assessed the effectiveness and safety of celecoxib in patients with OA and RA. In terms of pain reduction and functional improvement, celecoxib was superior to placebo and equivalent to older nonsteroidal anti-inflammatory drugs (NSAIDs) (naproxen and diclofenac) in patients with RA for up to 6 months. The incidence of gastroduodenal erosions or ulcers was significantly lower after taking celecoxib for RA and OA compared with diclofenac, naproxen, and ibuprofen.

Five RCTs published since July 2002 assessed the outcomes of patients taking celecoxib for RA or OA of the knee and/or hip. In terms of pain relief, celecoxib was superior to acetaminophen and placebo, but no better than other COX-2 inhibitors (nimesulide and rofecoxib) or diclofenac for followup periods ranging from 2 weeks to 1 year. Celecoxib had a safety profile similar to that of selective and nonselective NSAIDs, whereas dyspepsia was milder with celecoxib compared to diclofenac. None of the RCTs investigated gastroduodenal erosions or ulcers. The cost of celecoxib is nearly twice that of older NSAIDs.

Recommendations

Celecoxib is as effective as older NSAIDs and other COX-2 inhibitors in managing pain. Its advantage over older NSAIDs is that it causes fewer upper gastrointestinal side effects in patients who are at risk of such problems. According to guidelines issued by the American Pain Society, celecoxib should only be used by patients at risk for upper gastrointestinal problems who do not have cardiovascular risk factors.

Health Canada recommended restrictions for the use of celecoxib beginning in April 2005. Celecoxib should not be used by patients who have had a heart attack or stroke, serious chest pain related to heart disease, or congestive heart failure. Celecoxib may increase the risk of cardiovascular events in patients who smoke or have high blood pressure, high cholesterol, or diabetes. Celecoxib should be used at the lowest possible dose and for the shortest period of time necessary.

Methods

A systematic search included PubMed, EMBASE, HealthSTAR, The Cochrane Library, Science Citation Index, and the websites of health technology assessment agencies, research registers, and guideline sites from 1998 onwards. Analysis was limited to systematic reviews on celecoxib published in English from 1998, and systematic reviews and randomized controlled studies published since July 2002. Position papers, guidance reports, and information on the regulatory status of COX-2 inhibitors were also included.

Further research/reviews required

The long-term effectiveness and safety of celecoxib relative to nonselective NSAIDs and to NSAIDs combined with drugs such as proton pump inhibitors that protect the stomach and intestine is unknown. The higher risk of adverse cardiovascular events associated with celecoxib must be explored in trials with followup periods exceeding 6 months. A robust cost-effectiveness analysis is also needed before coverage decisions can be made.

Written by Carmen Moga, Christa Harstall, and Zhiliu Tang, AHFMR, Canada

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