Best Practice Message

September 2021

Focus on Safety: Celecoxib Prescribing

Practice changing moments

- The rate of prescribing of celecoxib has been increasing steadily since it was first funded, without any corresponding decrease in prescribing of other agents.
- Elderly are at a much greater risk of gastric bleeding, caution is required when considering prescribing NSAIDS including celecoxib in the elderly.
- Any patient at risk of gastric bleeding requires gastro-protection regardless of the choice of NSAID including celecoxib.
- Celecoxib may carry a greater risk for cardiovascular events when compared to non-selective NSAIDs.

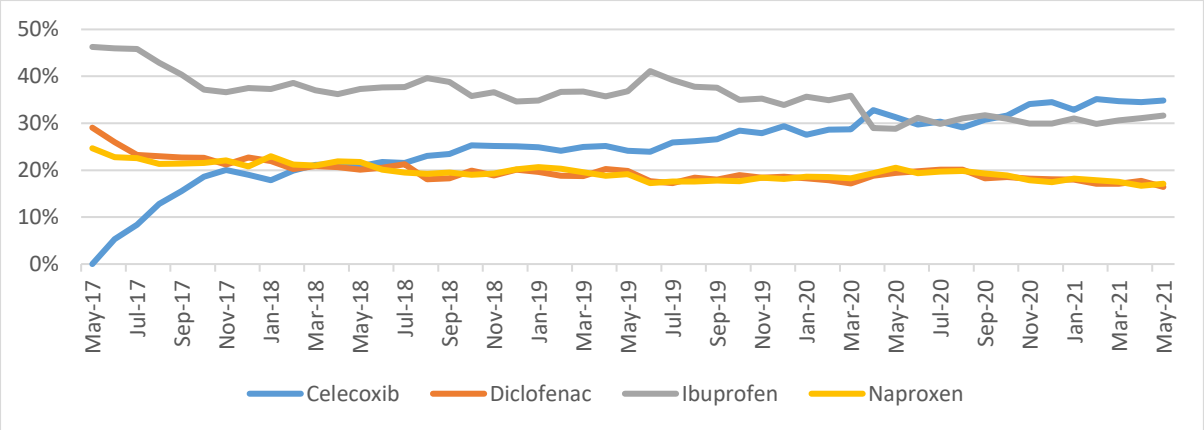

Figure 1. Percentage share of NSAID prescriptions in Hawke's Bay from May 2017 to May 2021 (liquids excluded).

Since becoming funded in New Zealand, use of celecoxib has increased steadily. It became the second most commonly used Non-steroidal anti-inflammatory (NSAID) in Hawke's Bay by July 2018 and use has continued to rise steadily ever since. When looking at adult prescriptions it has now surpassed ibuprofen in prescriptions.

The analgesic and anti-inflammatory effects of NSAIDs are produced through the prevention of prostaglandin production by inhibition of cyclo-oxygenase (COX) activity. Celecoxib is a COX-2 selective NSAID. Compared other NSAIDs that inhibit both COX 1 and 2, it is perceived to be GI protective. In patients over the age of 65, who may be at greater risk of gastric ulcers due to age related changes, the use of celecoxib is now much higher with prescribing rates of 1.5 times that of ibuprofen, the next most commonly used NSAID in this age group. However, the risk of upper GI complications is not eliminated entirely, with the relative risk of an upper GI bleed on COX-2 selective NSAIDs approximately 1.81 when compared to placebo.[1] In patients who are also prescribed aspirin for its antiplatelet effect there may be no difference in risk of gastric complications between celecoxib or non-selective NSAIDs[2]. In patients at high risk of upper GI bleeds celecoxib with gastro-protection may be an appropriate option. In patients with no risk factors for upper GI bleeds non-selective NSAIDs

such as diclofenac, ibuprofen and naproxen, should remain first line due to the higher risk of cardiovascular events with celecoxib compared to non-selective NSAIDs.

The risk of acute kidney injury (AKI) is similar across all NSAIDS with a RR of 1.73 compared to placebo in the general population. This risk is increased in older patients with a relative risk of 2.51 in patients over the age of 50.[3]

References:

1. Vascular and upper gastrointestinal effects of non-steroidal anti-inflammatory drugs: meta-analyses of individual participant data from randomised trials. The Lancet. 2013 Aug;382(9894):769–79.

2. Silverstein FE, Faich G, Goldstein JL, Simon LS, Pincus T, Whelton A, et al. Gastrointestinal toxicity with celecoxib vs nonsteroidal anti-inflammatory drugs for osteoarthritis and rheumatoid arthritis: the CLASS study: A randomized controlled trial. Celecoxib Long-term Arthritis Safety Study. JAMA. 2000 Sep 13;284(10):1247–55.

3. Zhang X, Donnan PT, Bell S, Guthrie B. Non-steroidal anti-inflammatory drug induced acute kidney injury in the community dwelling general population and people with chronic kidney disease: systematic review and meta-analysis. BMC Nephrol. 2017 Dec;18(1):256.

Authored by: Ben Firestone **Reviewed by:** Riani Albertyn

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