Laser better than NSAIDS ?

By Jan Tunér, Swedish Laser Medical Society

In the Dec 4th, 2004 paper issue of the British Medical Journal, a new meta analysis on the effect of NSAIDs on knee osteoarthritis pain appears, that may become important to the recognition and future development of laser therapy. A research group from Norway, headed by dr. Jan M. Bjordal summarises that nonsteroidal anti-inflammatory drugs (NSAIDs), including cyclo-oxygenase-2 inhibitors (coxibs), reduce short-term pain associated with knee osteoarthritis only slightly better than placebo, and long-term use of these agents should be avoided. Up for analysis were 23 placebo-controlled trials involving 10,845 patients, 7767 of whom received NSAID therapy and 3078 placebo therapy.

21 of the NSAID-studies were funded by the pharmaceutical industry, and the results of 13 of these studies were inflated by patient selection bias as previous NSAID-users were excluded if they had not previously responded favourably to NSAID. Such an exclusion criterion for non-responders, has never been seen in any controlled trial of laser therapy or other non-pharmacological therapies of osteoarthritis. In the remaining 10 unbiased NSAID-trials, the difference from placebo was only 5.9 mm on a 100mm pain scale. This is far less than established data on differences that are considered minimally perceptible (9 mm) or clinically relevant (12 mm) for knee osteoarthritis patients. In addition, none of the trials found any effects beyond 13 weeks.

Adverse events of long term medication with NSAIDs and particularly coxibs, has recently received much attention in the Vioxx-scandal. Consequently, coxibs like Vioxx has been withdrawn and Prexige has been withheld from the market, and the whole group of coxibs, are now under special observation by drug agencies in both Europe and the United States. In contrast to the virtually non-existent side-effects of laser therapy, NSAID side-effects cause an estimated number of 2000 deaths annually in Great Britain alone, because half of the 8.5 million osteoarthritis patients there take these drugs on a regular basis. The considerable international interest for the findings of the Norwegian research group has been highlighted by articles in several major newspapers across Europe and North America (see facsimile from Reuters below), and more than 60 unique website-listings within two weeks after publication. The recent development is further moving the balance in disfavour of NSAIDs and coxibs, and may well be the end of the era where they served as reference treatment for osteoarthritis.

The current situation may pave the road for other risk-free alternatives such as laser therapy, which has appeared to provide clinically relevant changes in several randomised placebo-controlled trials. From the findings of a recent Norwegian Health Technology Assessment Report, laser therapy was given potential of becoming at least twice as effective as NSAIDs, if

applied with optimal dose and energy (> 2.5 Joule per point for 810-30 nm, and > 0.6 Joules per point for 904 nm, and at least 3 points irradiated). Although the number of laser trials is still smaller than for NSAIDs, the unequivocal scientific findings so far, has earned laser therapy a top spot in levels of evidence and treatment recommendations for knee osteoarthritis issued by the Norwegian Drug Agency (!). Laser therapy is also reimbursed in the physiotherapy program of the National Health Insurance Agency, and is slowly becoming one of the standard therapies for knee osteoarthritis pain in Norway.

What we need to confirm the superiority of laser therapy, are new comparative trials of good quality where laser therapy is used in head-to-head comparisons with NSAIDs.

NSAIDs do little to relieve knee osteoarthritis pain
Last Updated: 2004-11-29 16:20:27 -0400 (Reuters Health), By Megan Rauscher

NEW YORK (Reuters Health) - Nonsteroidal anti-inflammatory drugs (NSAIDs), including cyclo-oxygenase-2 inhibitors (coxibs), reduce short-term pain associated with knee osteoarthritis only slightly better than placebo, and long-term use of these agents should be avoided, researchers from Norway report in the British Medical Journal Online First edition for Nov24th.

Current recommendations call for the use of oral NSAIDs in the treatment of painful knee osteoarthritis and the majority of patients with osteoarthritic pain use these agents, the team notes in their report.

To estimate the analgesic effects of NSAIDs, including coxibs, in patients with knee osteoarthritis, they analyzed the results of 23 placebo-controlled trials involving 10,845 patients, 7767 of whom received NSAID therapy and 3078 placebo therapy.
The results of the meta-analysis indicated that the change in overall intensity of pain with NSAIDs and coxibs was not statistically significantly different from that of placebo. "The advantage of oral NSAIDs over placebo for short-term pain relief is small and probably clinically insignificant," Dr. Jan M. Bjordal from the University of Bergen and colleagues report.
Evidence for long-term efficacy of these agents is also lacking, the researchers emphasize, noting that only one randomized placebo-controlled study lasted longer than 13 weeks and no effect of NSAIDs was found.

"We know that many osteoarthritis patients use NSAIDs regularly on a long-term basis but there are currently no data to support such use," Dr. Bjordal said. "We are bit surprised that the poor overall effect of NSAIDs for osteoarthritis has not been discovered before, given the common nature of osteoarthritis and the escalating prescription of NSAIDs for osteoarthritic pain."
"It seems," Dr. Bjordal surmises, "that the adverse effect debate has overshadowed the other important factor, efficacy, which is needed to balance benefit and harms. If we really want to have an evidence-based clinical practice of medicine, common diagnoses like knee osteoarthritis are good places to start," the researcher concluded. (BMJ Online First 2004)

Source: Swedish Laser-Medical Society