Melatonin may mediate nocturnal pain from shoulder disorders

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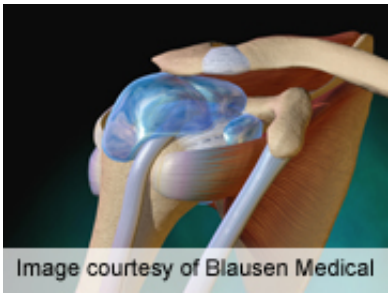

(HealthDay)—For patients with shoulder disorders such as a rotator cuff tear or frozen shoulder, melatonin may mediate nocturnal pain, according to a study published in the July 2 issue of *The Journal of Bone & Joint Surgery*.

Eunyoung Ha, M.D., Ph.D., from Keimyung University in Daegu, South Korea, and colleagues examined whether melatonin mediates nocturnal pain in patients with a rotator cuff tear or frozen shoulder. They analyzed the expression of melatonin receptor 1A (MTNR1A) and 1B (MTNR1B) and of acid-sensing ion channel 3 (ASIC3) in subacromial bursa and joint capsule samples collected from 63 patients (21 with a rotator cuff tear, 22 with frozen shoulder, and 20 with shoulder instability [control group]).

The researchers found that, compared with the control group, MTNR1A, MTNR1B, and ASIC3 expression was significantly increased in both the rotator cuff tear and frozen shoulder groups. In primary cultured fibroblast-like synoviocytes treated with proinflammatory cytokines, interleukin-1β and tumor necrosis factor-α significantly stimulated MTNR1A and MTNR1B expression. ASIC3 expression and interleukin-6 (IL-6) production were induced with melatonin treatment at a physiological concentration (10 nM). Melatonin-stimulated ASIC3 expression and IL-6 production were reversed with treatment with luzindole, a melatonin-receptor antagonist.

"Our study suggests that melatonin may play a role as a mediator of nocturnal pain with a rotator cuff tear or frozen shoulder, and this effect may be mediated via melatonin receptors," the authors write.

More information: Abstract
Full Text (subscription or payment may be required)