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EDITORIAL

Vitamin D supplementation for patients with chronic pain

A study [1] in a previous issue of the Scandinavian Journal of Primary Health Care (SJPHC) adds to the growing list of publications on vitamin D as a possible treatment for chronic pain. It describes a high prevalence of hypovitaminosis D in patients with non-specific musculoskeletal pain, headache, and fatigue. The conclusion is that general practitioners should maintain awareness of hypovitaminosis D in these patients. The authors are, however, aware that firm conclusions regarding cause and effect cannot be based on a cross-sectional study, which leaves plenty of room for confounding. Vitamin D supply is defined by sun exposure and dietary intake, which may be affected by work, economy, culture, diseases etc. Similarly, chronic pain may be affected by work, economy, culture, diseases etc.

A recent review describes a number of similar epidemiological studies that link low levels of vitamin D to chronic pain [2]. Correlations to the prevalence of chronic pain have also been found for geographical latitude and season of the year [3–5]. Osteomalacia, a clear biological explanation for an association between low vitamin D and pain is, however, infrequent. Any other mechanism has not been clarified, although vitamin D may inhibit inflammatory cytokines [6]. A Cochrane review from 2010 states that the existing randomized controlled trials are too small to support the hypothesis of vitamin D supplementation as a treatment for chronic pain [7].

The article in SJPHC received attention in the general media [8] and the public are increasingly informed about the associations between low vitamin D and chronic pain (and a number of other conditions). The public likes the idea of a natural and understandable explanation and solution to health problems. This may leave doctors working in general practice in limbo. How should we answer the patient who asks about vitamin D deficiency as a possible explanation for her chronic pain?

The desirable level of vitamin D has recently been evaluated to be 75–110 nmol/L [9]. Sun exposure covers most of the vitamin D supply in the summertime (exposure of 50% of the skin for 12 minutes at mid-latitudes at noontime is equivalent to a daily oral dose of 75 microgram (3.000 IU) vitamin D). In Scandinavia sun exposure does not generate vitamin D in the winter. Dietary vitamin D comes mainly from fatty fish and the normal diet does not provide a sufficient amount of vitamin D. Vitamin D supplements are thus important. A normal multivitamin tablet contains 5–10 μg (200–400 IU) vitamin D. The daily intake of vitamin D supplementation required to reach the desirable vitamin D level depends on the actual vitamin D level and may be calculated [10]. In approximation, the vitamin D level increases 1–2 nmol/L for every 1 μg (40 IU) of daily vitamin D supplementation. For example, a person with a vitamin D level of 20–40 nmol/L would need a daily dose of approximately 55 μg (2.200 IU) vitamin D supplementation to reach a level of 80 nmol/L. The maximum safe daily intake (not risking intoxication) is still debated. A recent review found that the upper safe limit for vitamin D consumption might be 250 μg (10.000 IU) daily [11], but most current guidelines set the recommended limit at 50 μg (2.000 IU) daily for adults. Precautions should be taken with patients with sarcoidosis, kidney disease, leukemia, lymphoma, myeloma, hyperparathyroidism, and others at risk of hypercalcaemia. A daily dose of 50 μg (2000 IU) vitamin D can be reached by combining non prescription vitamin D supplements, which contain up to 35–38 μg (1.400–1.520 IU) of vitamin D. The vitamin D supplements should be offered as vitamin D3 (cholecalciferol) and, for normal healthy adults, without calcium.

It seems reasonable to use vitamin D supplementation (with or without previous measurement of the vitamin D status) with up to 50 μg (2.000 IU) daily for patients with chronic pain. The supplement may not be a cure for the pain, but the study in the SJPHC demonstrates that low levels of vitamin D are common in this group of patients. The treatment is cheap, relatively safe, and there is emerging evidence that vitamin D supplementation has positive effects on public health [12]. Underlying conditions causing the chronic pain should be diagnosed irrespective of vitamin D status.

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