

On the prevention of migraine

– focus on exercise and the patient's perspective

Akademisk avhandling

för avläggande av medicine doktorsexamen
vid Sahlgrenska akademien vid Göteborgs universitet

Avhandlingen kommer att offentligen försvaras
i hörsal Arvid Carlsson, Medicinargatan 3, Göteborg
fredagen den 24 februari 2012 kl. 9.00

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Avhandlingen baseras på följande delarbeten:

- I. Varkey E, Hagen K, Zwart JA, Linde M. **Physical activity and headache: results from the Nord-Trøndelag Health Study.** Cephalalgia 2008;28:1292–7.
- II. Varkey E, Cider Å, Carlsson J, Linde M. **A study to evaluate the feasibility of an aerobic exercise program in patients with migraine.** Headache 2009;49:563–70.
- III. Varkey E, Cider Å, Carlsson J, Linde M. **Exercise as migraine prophylaxis: a randomized study using relaxation and topiramate as controls.** Cephalalgia 2011;31:1428–38.
- IV. Varkey E, Linde M, Hensch I. **‘It’s a balance between letting it influence life completely and not letting it influence life at all’: a qualitative study of migraine prevention from the patients’ perspectives.** Submitted.

Göteborg 2012



UNIVERSITY OF GOTHENBURG

ABSTRACT

Migraine is a common neurological disorder causing huge suffering both for the individuals affected and for society. As migraine is a chronic disorder that cannot be cured, but merely relieved, prevention is of great importance. Exercise is often recommended in migraine prevention, but evidence of efficacy is still lacking. It can be difficult for patients with migraine to perform exercise, since heavy physical activity is a well-known trigger for migraine. It is known that pharmacological prevention is underused, but the patients' overall views and experiences of migraine prevention have not been sufficiently studied.

The **overall aim** of this thesis was to evaluate different aspects of physical activity in relation to headache, especially the possible preventive effects of exercise in migraine. Furthermore, it aimed to elucidate the complexity of migraine prevention from patients' perspectives.

Study I was divided into a prospective and a cross-sectional part aiming to evaluate the relationship between level of physical activity and migraine and non-migraine headache. This was done using data from the Nord-Trøndelag Health Surveys.

Study II was an intervention study aiming to evaluate a method of exercise, for untrained patients with migraine, regarding improvement of exercise capacity and migraine status.

Study III was a randomized controlled study in which exercise was compared with common pharmacological and non-pharmacological treatments with regard to migraine prevention.

Study IV was a qualitative study using content analysis to elucidate migraine prevention from a patient perspective.

The main findings were that individuals with migraine and other types of headache are less physically active than headache-free individuals. There was also a strong linear trend of higher prevalence of 'low physical activity' with increasing headache frequency. It can be difficult for patients with migraine to perform exercise. An exercise programme based on aerobic exercise led by a physiotherapist showed no deterioration in migraine status: to the contrary, migraine status improved, and so did maximal oxygen uptake (VO_{2max}) and quality of life. The effect of exercise in the randomized controlled study did not significantly differ when the reduction in migraine frequency was compared with common and well-documented pharmacological and non-pharmacological options. Increased VO_{2max} was significantly improved in the exercise group compared with the other two treatments, and side effects were only seen in the pharmacological group. The findings suggest that exercise may be an option for the prophylactic treatment of migraine in patients who do not benefit from, or do not want, daily medication. The patients' views on prevention are also important to consider in migraine prevention. A balance between letting it influence life completely and not letting it influence life at all is described, and in both directions there is a risk that life is very much controlled by migraine. Accepting the disease and the fact that migraine prevention must influence life to some degree is suggested as a way of taking control. Further, an appraisal of the advantages and disadvantages of different treatments, attitudes, support, and knowledge influences the choice of prevention strategies.

In conclusion, people with headache, including migraine, are less physically active than people without headache. For patients with migraine, maximal oxygen uptake can increase without deterioration of migraine status through physiotherapist-led exercise three times a week. Exercise is suggested as a means of migraine management, but the strategies patients choose to use depend upon individual preferences. Decisions regarding prevention are also affected by the patients' perspectives of their illness.

Keywords: headache, physical activity, exercise, chronic disease, rehabilitation, physical therapy, relaxation, prevention, quality of life, attitudes, knowledge, experiences

ISBN: 978-91-628-8406-2

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