On diet in ankylosing spondylitis

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Akademisk avhandling

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The aim of this thesis was to examine the role of diet in ankylosing spondylitis (AS). Patients were examined in: i) a postal questionnaire survey of dietary habits and gastrointestinal (GI) symptoms; ii) a study on biomarkers of diet and disease activity; iii) a comparison of cardiovascular risk factors with the general population using data from the Västerbotten Intervention Programme (VIP), and; iv) a 21-week omega-3 fatty acid supplementation study regarding the effects on disease activity.

The postal survey (111 respondents) revealed no correlation between dietary habits and disease activity measured by the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI). However, GI problems, and in particular GI pain, were prevalent in patients with AS irrespective of NSAID usage. Gastrointestinal pain was predicted by higher BASDAI and a higher consumption of vegetables. Overall, 30 (27%) of the patients experienced an aggravation of gastric symptoms when consuming certain foods. In the study of biomarkers (n=66) no correlation was found between diet and disease activity as assessed by BASDAI. There were, however, positive correlations between BASDAI and the content of arachidonic acid (AA) in plasma phospholipids ($r_s=0.39$, $p<0.01$) and the estimated activity of the enzyme delta-5-desaturase ($r_s=0.37$, $p<0.01$). This may reflect a process involved in the inflammation associated with AS that requires further investigation.

Comparing data from the VIP for patients (n=89) and controls showed no significant differences regarding diet, physical activity or smoking. Nonetheless, more pronounced correlations between blood lipids and diet were identified among patients than in controls. Furthermore, the levels of cholesterol and triglycerides were lower in patients compared with controls. Lastly, in the supplementation study, a high-dose of long-chain omega-3 fatty acids (4.55 grams/day) was found to lower disease activity, as measured by BASDAI, whereas low-dose treatment (1.95 grams/day) caused no change.

In conclusion, within a group of Swedish AS patients we found no correlation between ordinary dietary habits and disease activity. Diet in western populations of patients with AS may, however, be of importance for gastric symptoms and for cardiovascular risk factors. The finding of a lowered disease activity in patients on high-dose supplementation with long-chain omega-3 fatty acids indicates that a radical dietary shift may influence disease activity. The findings of a positive correlation between disease activity and plasma AA, and the decreased levels of blood lipids imply the need for further studies into fatty acid metabolism in AS.