Research Article

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Some Dietary Factors Among Ashkenazi and Sephardic Jews: An Ecological Study based on the Literature

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Abstract

In Israel, the multiple sclerosis (MS) prevalence was nearly two - fold in European / American immigrants (mostly Ashkenazim Jews) (53.7 per 100,000) in comparison to African / Asian immigrants (mostly Sephardim Jews) (27.9 per 100,000) in 2000. In the present study, a comparison of both populations with respect to the preservation methods of meat was made by an evaluation of totally 48 cookery books used as literary sources. It was shown that smoking of meat was much more common in Ashkenazi than Sephardic cookery (Yates' corrected four - fold table test: $chi^2 = 28.49$; p < 0.0001). In contrast, the percentage of vegetables (e.g. onions; parsley; garlic) did not differ between both groups. The findings hold for recommendations that might be given to all MS patients, although they are founded on experimental data so far.

Introduction

Multiple sclerosis (MS) is a chronical disease of the human central nervous system (CNS) which shows pathologically focal demyelinating inflammation, gliosis, and a gradual loss of axons. It affects people in their most active age (15 - 50 years) [1,2]. In the first ten years, on average, the course of disease is relapsing remitting (80%) but patients develop in their majority a secondary chronic progressive course, and ca. 20% have a primary progressive type without any relapses [2]. MS is considered an autoimmune condition that shows many enhanced immunological processes like the development of T and B cell foci in brain and spinal cord, and oligoclonal bands in the cerebrospinal fluid (CSF) [1,2]. The worldwide prevalence of MS shows a north - to - south gradient in the northern hemisphere (>80 per 100,000 high prevalence; 80 - 30 per 100,000 medium prevalence; and < 30 per 100,000 low prevalence), whereas e.g. in Africa and Latin America the MS rate is generally low; only in Australian and New Zealand's white population (but not in South African whites), the prevalence increases again to a medium level [3,4].

The aetiology of MS is multivariate, and environmental and genetic factors play a role. Aetiological factors are acting at an early age (5 - 20 years) [5,6]. At present, various factors are discussed to play a role, e.g. Epstein - Barr virus (EBV) infection, vitamin D deficiency, tobacco smoking, and dietary factors as the lack of n-6 and n-3 fatty acids and of vegetable foods, and frequent intake of smoked and nitrite - cured meat and meat products [7-9].

In Israel, a difference of MS prevalence in European and American immigrants on one hand and migrants from Africa and Asia on the other, was found where the prevalence of African / Asian immigrants (mostly Sephardic) was only ca. one half of the rate in European / American migrants (mostly Ashkenazim); the prevalence in native Muslims and Bedouins was still lower [10]. In the present paper, an ecological study by means of the literature was made in Ashkenazim vs. Sephardim, as an approximation for European / American and African / Asian Jews, respectively.

Methods

Cookery books [11-45] from Ashkenazi (n=19) and Sephardic (n=17) Jews were screened. Statistical testing was made by four - fold table chi^2 - analysis. P - Values of 0.05, or smaller, were considered significant [46].

Results

All 19 cookery books covering the Ashkenazim diet gave evidence of either smoking alone (n = 18) or both smoking and drying (n = 1) for preservation; however, drying was mentioned only for fish and not for meat in that book. In contrast, only one of the 17 cookery books from Sephardic Jews mentioned smoking for preservation, whereas other methods like e.g. sun - drying and preparation of qaourma (i.e. air - tight sealing in fat) were recorded. The variation was highly significant (four - fold table test: Yates - corrected chi² = 28.49; p < 0.0001). Vegetables (parsley; onions; and / or garlic) were reported in all three evaluated Ashkenazim cookery books and all four evaluated Sephardim books, and the statistical test was not significant (four - fold table test: Yates - corrected chi² = 0.14; p = 0.970).

Discussion

As in all the ecological studies made so far (n = 16) [9], there was a highly significant difference with respect to smoke preservation of

meat between Ashkenazim and Sephardic Jews. This agrees with a statement in the literature that smoke preservation is very common in Ashkenazim of Eastern and Western Europe and America [21]. In contrast, vegetables like onions and garlic are used overall in the Jewish cuisine. This is also reflected by the present evaluation which gave no difference between the two populations. However, some animal experimental studies revealed a clear evidence of neuro - immunosuppressive effects of this food [47,48]. For example, luteolin which occurs in lemons, parsley and celery, was immunosuppressive in EAE [47]. Similarly, curcumin which is contained e.g. in turmeric and curry, was also suppressing the animal model [48]. Furthermore, a diet enriched in fruits and vegetables led to an increase of both the Physical Health Compositive (PHC) and the Mental Health Compositive (MHC) scores in a group of MS patients [49]. Since a possible interaction was not tested in the present study, an additional immunosuppressive effect of these vegetables cannot be excluded, and their more common ingestion seems to be justified, even if only experimental data support this view, at present.

On possible mechanisms, the in - vitro formation of different nitrophenol compounds in the meat during processing was reported [50,51]. Furthermore, the conjugation of these phenols which originate in the wood - smoking procedure, with different meat proteins was emphasized [52]. In that way, some nitrophenol - carrier conjugates are formed in the smoked meat. On the other hand, nitrophenol - carrier conjugates have been shown experimentally to produce a chronic autoimmune disease of the thyroid gland in animal experiments, when thyroglobulin was used as the carrier [53].

In summary, meat smoking was practiced much more commonly in Ashkenazi than in the Sephardic Jews, which former have nearly a double MS prevalence rate in comparison with the Sephardim. All MS patients should avoid processed meats because of the nitrophenol concentration of these foods. On the other hand, they should use more commonly vegetables and fruits. For example, turmeric and curry (because of high curcumin) and parsley, celery and lemons (because of high luteolin) should be recommended to eat to MS patients. The general use of these recommendations should be tested in large population studies

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