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Mini Review

Nutrition, Cardiovascular Prevention and Sustainability for the National Health Systems

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Abstract

An incorrect diet, through the well-known consequences of the main cardiovascular risk factors, has proven to be the most important risk factor associated with cardiovascular diseases. On the contrary, correct nutrition, actively contributing to the control of cardiovascular risk factors, has significant effects on health and, therefore, indirectly on the costs associated with it. The beneficial effect of the diet is due to their association and variety and the reference modeling is the "Mediterranean Diet". It has an impact on society that goes well beyond cardiovascular, oncological, and neurological disease prevention and public health, but extends its benefits to the environment and costs.

Introduction

In a post-pandemic scenario, the analysis of the correlation between diseases and the sustainability of the National Health Systems (NHS) becomes increasingly relevant and necessary. A primary role in this analysis certainly belongs to cardiovascular diseases (heart attacks and strokes) which are the leading cause of death in the world and Europe representing as many as 20% of the causes of death of Europeans who die before the age of 65, a mortality which we can define premature [1]. An incorrect diet, through the well-known consequences on the main cardiovascular risk factors (diabetes, hyperlipemia, arterial hypertension, obesity), has proven to be the most important risk factor associated with this group of diseases [2]. On the contrary, correct nutrition, actively contributing to the control of the risk factors mentioned above, has significant effects on health and, therefore, indirectly on the costs associated with it [3,4]. Economic effects are certainly not negligible, if we consider that, for example in Italy, the expenditure relating

to the management of the NHS between 2000 and 2023 went from 68 to 131 billion euros [5]. Certainly high, but still largely insufficient to cover current and future healthcare needs expected due to the progressive aging of the Italian population.

Aim

It is not individual foods that protect against diseases, but the beneficial effect of the diet is due to their association and variety. It is therefore a duty to defend our health and the costs of our NHS even at the table with the food. How? Simply by applying the models of our "Mediterranean" food tradition.

Results

In the Mediterranean Diet (MD) the composition of the different nutrients contributes, not individually, but in association, to the control, for example, of glycemic values and cholesterol, to reduce the general inflammatory state [3,4]. Therefore, MD is universally and scientifically considered



an example of correct nutrition and in the Guidelines of the European Society of Cardiology 2021 it is strongly recommended for the prevention of CV diseases because it is effective in reducing cardiac and cerebral ischemic events, but its effects are also significant in reducing some types of tumors (such as, for example, colorectal, pancreatic, breast, endometrial, prostate) and in reducing the incidence of Alzheimer's and Parkinson's [6,7]. And by reducing morbidity and mortality from all causes, it promotes healthy longevity [8]. Consequently, by improving the health status of the population, a reduction in healthcare spending is also achieved. A typical example is provided by the salt control. Reducing salt consumption has beneficial effects on controlling blood pressure and its costly complications. Reducing salt intake to 5 g/day, as recommended by the World Health Organization (WHO), would lead to an overall reduction of approximately 23% in strokes and 17% in cardiovascular diseases [9]. Interestingly, in this regard, the data from a North American study calculated how a reduction of 3 g/day in salt consumption in the American population leads to a significant reduction in new cases of cardiovascular diseases and mortality, which would translate into savings in terms of health spending between 10 and 24 billion dollars per year [10]. Data is also confirmed in a recent prospective study model projected over 10 years on the Japanese population from which it emerges that reducing salt leads to savings in health spending of approximately 2% [11]. Other economic analyses have calculated that if the cost per year of life with pharmacological therapy with beta-blockers or statins fluctuates from 2,000 to 5,500 Euros and for the coronary bypass is around 25,000 Euros, with MD it stands at around 900 Euros [12]. A study by the Organization for Economic Co-operation and Development (OECD) conducted in Canada, France, Holland, Spain, and the USA, has shown how the increase in prevention spending supported by these nations has led to a good reduction in spending on curative and rehabilitation services [12]. In practice, a 1% increase in spending on prevention is associated with a 3% reduction in spending on therapeutic services.

Discussion

Nutritional interventions that promote MD do not imply an increase in food expenditure. Indeed, favoring seasonal foods with low caloric density such as cereals (better if whole), legumes, greens, and fruit, allows a reduction in the costs of daily food expenditure. In fact, by avoiding the temptations of aggressive marketing that advertises "dietetic" products or "first fruits" and for these reasons sold at a higher price, we will realize that many healthy foods are also cheap. This also applies to oily fish: if mackerel and sardines can be found at affordable prices even at the fishmonger's counter, tuna and salmon are quite cheap if purchased from the shelf of the shop or supermarket. Speaking of spending, an aspect that should not be underestimated would also be the taxation of unhealthy foods. The introduction, for example, of a tax on soft drinks containing sugar like the one introduced in Great Britain in 2018, would be associated with an economic income to be invested in preventive activities and, at the same time, with some reduction in the obesity rate of our young people

[13]. Of course, to obtain better results in health and economic terms it is still necessary to plan targeted interventions, both medically and politically, on the principles of nutritional education. But healthy eating and, in particular once again, MD represents an important model of a 360° sustainable diet, as it is capable of bringing benefits not only in terms of health but also to the environment [14]. This is a fairly recent vision, but very interesting: investigating and evaluating the role of food not only from the point of view of public health but also of environmental impact with its implications in economic terms. In this regard, some studies have shown that, on average, to obtain 100 calories, MD causes an environmental impact of approximately 60% less than a Northern European or North American diet, typically based on meat and animal fats, rather than on vegetables and cereals and fresh and lightly processed foods. Thanks to the latter and also to the fact that the MD style implies a greater food awareness, connection with the territory, and respect for seasonality and biodiversity (with consequent reduction of intensive agriculture), there is limited use of natural resources (soil, water, lower greenhouse gas emissions): considering the greenhouse gas emissions of protein-rich foods (kg CO₂ equivalent per 100 grams of protein). Foods can have widely varying impacts, but the smaller impact of animal products is much larger than the larger impact of plant substitutes [15]. Therefore, it is a dietary model rightly defined as a friend of the environment and the planet, a concept well highlighted by the so-called "Inverted Food Pyramid" [16]. Furthermore, traditionally based on the consumption of frugal portions, it helps to reduce food waste. Finally, spreading the MD benefits the development of many production realities: the increase in demand for typical MD products creates employment and income for agricultural and food companies in the many Countries overlooking the Mediterranean Sea and in other Countries whose agriculture produces typical foods of the MD. Another economic advantage is linked to agritourism capable of attracting national and foreign tourists.

Conclusion

We can state that correct nutrition, in particular, MD, has an impact on society that goes well beyond cardiovascular, oncological, and neurological disease prevention and public health, but extends its benefits to all-round sustainability with positive environmental and economic impact.

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