GERIATRIC NUTRITION

David Fenech

Introduction

Nutritional intake, a major factor in health maintenance, can improve the quality and length of life by attenuating changes in body composition, deterioration in tissue function (Klein and Rogers, 1990), and by helping in the prevention and control of diseases like diabetes, hypertension and degenerative disease such as atherosclerotic disease and osteoporosis (Sandstead, 1987). Nutrient needs for all people are given by the Recommended Dietary Allowances (RDA) originally established in 1943 (Koop, 1988). RDAs are:

> "The levels of intake of essential nutrients considered, in the judgement of the Committee on Dietary Allowances of the Food and Nutrition Board on the basis of available scientific knowledge, to be adequate to meet the nutritional needs' (Food and Nutrition Board Committee on Dietary Allowance, 1980).

In this study, the nutritional status of the Maltese geriatric population was investigated by assessing the nutritional habits of a randomly selected elderly population (n=100) living at home and compared with available RDAs. The nutritional knowledge of the elderly was also investigated by means of an educational questionnaire.

Drug-Nutrient interactions

Factors having an impact on drug-nutrient interactions include chronic and multiple drug regimens, age-related changes in drug metabolism and decreased function of the vital organs that result in impaired drug clearance. Also, the common practice of administering medications with meals can induce drug-nutrient interactions (Roe, 1990).

Methology

Study 1

The social, medical and nutritional characteristics of a randomly selected elderly population were investigated. This was done by visiting the elderly under study (n=100) each day for a period of 7 days and asking them to recall what foods and drinks they had consumed during the preceding 24 hours.

Study 2

The nutritional education of the elderly was assessed by means of a questionnaire given to all subjects on the last day of study 1. Half the subjects (n=50, Group A) were then given a small leaflet with a few dietary guidelines which were also personally explained and all subjects (n=100, Groups A and B) were reassessed 1 month later. The two sets of results of both groups were then compared to determine any possible beneficial effects that the patient counselling might have had.

Table 1: Education questionnaire: Sex distribution

Group A	20 Males 30 Females	Group B	21 Maltese 29 Females

Study 3

The subjects were also asked what medications they were on and whether or not they took them at the same time as taking a meal. This was carried out to examine the risk and incidence (if any) of significant drug-nutrient interactions. A shortlist of some of the more important common drug-nutrient interactions was compiled.

Results

Survey 1

In this study 41% (n=41) of subjects were males and 59% (n=59) were females. Out of these, 79% were aged between 65 and 74 years (35 males and 44 females) and 21% were aged 75 and over (6 males and 15 females). These could be subdivided into the following categories:

Table 2: Marital status distribution

Marital status	M	F
Widow	--	36
Widower	21	--
Married and with spouse	18	18
Single	2	5

Of these, 34 were living alone, 61 were living with family and 5 were living with friends.

The mean weight of the subjects under study were found to be on the higher side of the normal ranges (Roe, 1990). However, the deviations from the mean were fairly large, with 53% (22) of males and 59% (35) of females being above the higher limits for their respective heights.

Taking all studied nutrients together (see Table 3) it may be concluded that a substantial proportion of subjects showed intakes below recommended standards although the average intake values were fairly high. This can be seen by looking at the standard deviations which are fairly wide. In fact, the problem seems to be overnutrition combined with a general undernutritional of essential nutrients such as minerals and vitamins. This is similar to other studies (Steen et al 1977; DHSS, 1972); McLeod et al, 1974).

The mean daily dietary intakes recorded were as follows:

Table 3: Mean daily dietary intakes

Food Type	Units	Male	SD	Female	SD
Energy	kcal	2460	531.9	2188	566.60
Protein	g	69	15.1	61	15.90
Fat	g	111	25.8	99	26.50
CHO	g	279	60.4	248	64.90
Calcium	mg	1031	264.6	888	218.50
Iron	mg	14.2	3.76	13.8	3.50
Potassium	g	2793	527.5	2688	562.60
Vitamin A	µg	1618	664.4	1471	519.30
Thiamine	mg	1.4	0.68	1.3	0.61
Riboflavine	mg	1.59	0.68	1.5	0.62
Ascorbic Acid	mg	78	33.3	96.5	39.80
Sodium	mg	2411	435.4	2305	383.50

(SD = Standard deviation)

Study 2

On the first occasion (n=100), 49% (75% of them women) replied that food was very important for their health, and 68% thought that they should eat less than adults. 36% said that the most important food group was 'meat and alternatives'. 45% thought that the elderly as a group needed regular supplementation whatever the case. 17% reported asking someone for advice on food but only 10 (21%) said they asked a pharmacist specifically.

On the second occasion there were two significant changes: the group who had been given some elementary advice (n=50) gave more importance to fruits (30%) and bread (41%) than the unadvised group (n=50) 33% of whom replied meat was most important.

Study 3

Table 4: Incidence of chronic diseases with nutritional implications

	M	F	Total
Hypertension	20	11	31
Diabetes	7	8	18
Elevated Blood Lipids	16	11	27
Chronic digestive disorders	10	11	21
Alcoholism (reported)	2	1	3

Table 5: Ten most common chronic drugs

Drugs	% (n=100)
Vitamins	76
Aspirin and NSAIDs	70
Antacids	45
Diuretics	25
Calcium antagonists	10
Bronchodilators	10
Laxatives	8
Lipid lowering agents	6
Antidepressants	6
Hypoglycaemic agents	4

In addition 23% were on an antibiotic for a current infection. 95% of males and 100% of females were on at least one drug. 88% took medication with or just before meals. The major problem appeared to be the incidence of GI problems such as nausea and constipation.

Conclusion

The Maltese geriatric person in general needs to eat less calories and more essential nutrients are in particular thiamine and riboflavine. Although these could be supplemented with multivitamin preparations, in most cases altering the meal pattern to a more balanced one would be both

more pleasant and cheaper for the elderly. Educating the elderly does seem to have some beneficial aspects although it has to be kept simple. Nutritional support and education are advisable since an improved nutritional status may be one of the factors enabling the elderly to live comfortably and independently in their homes.

References

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