Original Article

Use of homeopathic formula in malnourished children

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ABSTRACT

The present intervention study sought to assess the results of homeopathic treatment in malnourished children aged 1-19 years old below the 3th percentile in the weight-height ratio at San Juan Policlinic, Ranchuelo County, Cuba, between November 2004 and December 2005. A total of 99 children were randomly allocated by Mathcad in two groups, one (n=50) was given homeopathic treatment, and the control group (n=49) that did not. Administration of medication was defined by clinical criteria. Inclusion, exclusion and exit criteria were defined. Variables were identified and operationalized, and the information collected from both groups was interpreted. After one-year follow-up, 42 out of 50 children (84%) treated with homeopathy attained normal weight, whereas only 15 out of 49 (30%) of the children in the control group attained normal weight.

Keywords: Malnourishing; Children; Homeopathy; Comparative study

Introduction

According to the World Health Organization (WHO), about 12 million children younger than 5 years old die every year, especially in countries in development. To the WHO it is clear that children with severe malnutrition are at high risk of dying, and every year about 6 million people die from starvation [1-3].

In Cuba, nutrition and its problems also represent a source of concern [4,5]. The use of homeopathy in malnutrition is not widespread in our county. To be sure, such condition is treated with proper diet, hygiene and vitamins. However, although vitamins are useful and even indispensable in some cases, their systematic use might result in other disease, thus implying a risk for patients and economic onus for families and society at large [6-8]. On the other hand, there are no studies assessing the correlation between the nutritional state and the clinical, epidemiologic and social factors of the population [9,10].

The present study sought to characterize several clinical, social and epidemiologic factors associated with malnutrition in San Juan de Years, and to assess whether homeopathic medication would help children normalize their nutritional status. For this purpose, a homeopathic complex including *Calcarea fluorica* 30 cH, *Calcarea carbonica* 30 cH and *Calcarea phosphorica* 30 cH was used.

According to classic sources [11,12] such medications improve the assimilation of nutrients without increasing appetite. This complex has already been used in veterinary medicine [13,14], but not in human beings with this particular indication.

Therefore, the aim of the present study is to assess the effectiveness of a homeopathic complex including *Calc-f* 30 cH, *Calc* 30 cH and *Calc-p* 30 cH in the treatment of malnourished children.

Materials and methods

The present exploratory intervention study was performed in San Juan de Years, Ranchuelo County, Cuba, between November 2004 and December 2005 in order to identify possible differences in the results of the treatment of malnutrition when homeopathic medication is used in addition to diet.

The sample comprised 99 malnourished [weight-height ratio was below the 3rd percentile (3P)] out of 981 children aged between 1 and 19 years old whose The sample was randomly divided in two groups by means of simple random sampling using software Mathcad 14.0. Thus, the treated group comprised 50 children, and the control group 49. No stratification was performed regarding gender and residence type (urban or rural) – which, nevertheless, are described - because these factors vary in different population areas. Future studies intend to include larger samples and investigate whether such factor exert influence on the outcomes.

Inclusion criteria: low weight (<3P) in children aged 1 to 19 years old. Exclusion criteria: presence of encephalopathy, malformations, and severe mental retardation. Exit criteria: children who moved to other areas or did not comply with treatment.

Homeopathic treatment consisted in the use of a complex including *Calc-f* 30 cH, *Calc* 30 cH and *Calc-p* 30 cH. Patients in both groups were prescribed a diet adjusted to their age and gender [3], and a poly-vitamins, 1 tablet/day to children older than 9, and half tablet/day to children younger than 9 years old.

The dependent (protein-energy malnutrition) and independent (clinical, social and epidemiologic factors) variables were defined (Table 1).

Clinical assessment was based on weight-height (in kg and com, respectable) with inclusion, exclusion and exit criteria, and it was the determining factor to prescribe the homeopathic formula, which was given to children below 3P.

The data were entered in an ad hoc database and data were processed first manually and then with software SPSS 15.0. Statistical analysis employed Chi-square test to establish the significance of differences between frequencies according to strata (treated and control groups) and/or time-points of a same variable (before and after use of homeopathic formula). Significance was established as: $p<0.01$ = highly significant difference; $0.01\leq p< 0.05$ = significant difference; and $p\geq 0.05$ = non-significant difference.

Results and Discussion

The results are described in tables and graphics that allow concluding there was significant correlation between the use of homeopathic complex and attainment of normal weight in malnourished children.

Table 2 describes the initial population according to weight-eight ratio distributed in groups according to percentiles. Among 99 patients <3P, most corresponded to age-range 5 to 9 years old (n= 42, 42.4%).

Table 1. Operationalization of variables

Variables	Description	Measurement scale
Independent		
Epidemiologic		
Age	Age (years)	Pediatric: 4 to 19 years old Adults: 20 to 64 years old Elderly: older than 65 years old
Gender	Classification according to gender	Male Female
Skin color	Definition of skin color	White Black Brown
Clinical		
Weight	Weight of patient	Kg.
Height	Height of patient	Cm.
Weight-height ratio	Ratio of weight to height in kg and cm expressed in percentiles for the Cuban population	<3P: Malnourished. 3-10 P: Thin. 10-90 P: Normal weight. 90-97 P: Overweight >97 P: Obese
Social		
Housing conditions	Good Regular Poor	Good: stone or concrete flooring, sanitary service, water, hygiene. Regular: one of the above is lacking except for hygiene. Poor: as above and also hygiene lacks.
Parents' schooling	Elementary Secondary Pre-university University	Primary: completed 6th grade Secondary: completed 9th grade Pre-university: completed 12th grade University: attained degree.
Overcrowding	Yes or No	Overcrowding: more than 4/room.
Family income per capita	Total income of the family divided by the number of its members	Pesos MN (USD 1.00 = MN $25.00)
Sanitary education	Mothers' knowledge on nutrition	Questionnaire
Dependent		
Outcomes	Weight-height ratio before and after intervention	Solved: attained normal weight Unsolved: did not attain normal weight

Table 2: Descriptive analysis of the study population according to weight-height ratio according to age and distributed according to percentiles

Age	<3 P	%	3 -10 P	%	10 – 90 P	%	90 – 97 P	%	>97 P	%
1- 4	21	21.2	13	29.5	174	29.4	56	30.7	8	12.1
5 - 9	42	42.4	9	20.4	165	27.9	43	23.6	30	45.4
10 -14	27	27.2	8	18.1	106	17.9	52	28.5	21	31.8
15 -19	9	9	14	31.8	145	24.5	31	17	7	10.6
Total	99	10	44	4.4	590	60.1	182	18.5	66	6.7

Table 3 shows that most affected age-range was 5-9 years old (42.4%) and that more boys (75%) were affected compared to girls; significance varied according to age-range among highly significant (1-4 years old: p=0.001), significant (5-9 years old: p=0.014; 10-14 years old: p=0.012), and non-significant (15-19 years old: p=0.096). The most affected age-range was 5-9 years old (42.4%).

Table 3: Distribution of the nutritional state according to age, gender and residence area

Age (years)	Gender		Residence	
	Male (n, %)	Female (n, %)	Urban (n, %)	Rural (n, %)
1-4	18 (86)	3 (14)	5 (16.6)	16 (23.1)
5-9	29 (69)	13 (31)	14 (46.7)	28 (40.6)
10-14	20 (74)	7 (26)	8 (26.7)	19 (27.6)
15-19	7 (7)	2 (2)	3 (10)	6 (8.7)
Total	74 (75)	25 (25)	30 (30)	69 (69)

Table 3 still shows that most malnourished children resided in the rural area, which is a historical trend due to several reasons [3,4], including deficient nutrition, poverty, lack of hygiene, dietary habits, contaminated water, and association with parasitic and bacterial diseases. Also in this case the three younger age-ranges exhibited significant difference (p=0.016; p=0.031; p=0.034, respectively), whereas age-range 15-19 years old did not (p=0.317).

Table 4 describes the age distribution of the sample population according to treatments. From 50 patients in the treated group, 10 were in the 1-4 year-old age range, 25 in the 5-9 year-old age range, 9 in the 10-14 year-old age range, and 6 in the 15-19 year-old age range. From the 49 patients in the control group, 11 were in the 1-4 year-old age range, 17 in the 5-9 year-old age range, 18 in the 10-14 year-old age range, and 3 in the 15-19 year-old age range. There were no significant differences between both groups (data not shown).

Table 4: Distribution of the study sample per age-range and treatments

Age	Total	Homeopathy		Control	
		n	%	n	%
1- 4	21	10	20	11	22
5 - 9	42	25	50	17	35
10 -14	27	9	18	18	37
15 -19	9	6	12	3	6
Total	99	50	100	49	100

Table 5 shows that 42 out of 50 (84%) patients in the group treated with homeopathy attained normal normal weight, whereas in the control group, only 15 out of 49 (30%) did, and 70% (n=34) remained below the 3rd percentile. Distributed by age, age-range 1-4 years old proved to be the most vulnerable in the control group, since only 1 child out of 11 (9%) attained normal weight.

Table 5: Distribution of the study sample per age-range and treatments after treatment

Age	Homeopathy				Control			
	Normal weight		Malnourished		Normal weight		Malnourished	
	10 – 90 P	%	> 3 P	%	10 – 90 P	%	> 3 P	%
1- 4	9	18	1	2	1	2	10	21
5 - 9	22	44	3	6	4	8	13	27
10 -14	7	14	2	4	9	18	9	18
15 -19	4	8	2	4	1	2	2	4
Total	42	84	8	16	15	30	34	70

These results show that the homeopathic treatment induced recovery of the normal weight compared to the control group. The proportion of cases that attained normal weight in the treated (42) compared to the control (15) group was statistically significant ($p<0.001$, U test, Mathcad).

Comparison between age-ranges (Chi-square) showed that the shift to the normal weight was highly significant in age-ranges 1-4 and 5-9 years old ($p=0.007$ and $p<0.001$, respectively), and significant in age-range 10-14 years old ($p=0.035$), but difference was not significant in age-range 15-19 years old ($p=0.157$), although the trend for improvement compared to the control group is maintained.

The aims of the present study were limited to validate the effectiveness of a homeopathic formula as adjuvant in the treatment of malnutrition. Randomization was appropriate for this purpose, however, further issues must still be addressed, such as the velocity of shift from a nutritional state below the 3rd percentile and normal weight and the factors able to influence such shift. In his regard, no studies could be found in the literature.

Despite such limitations and the one represented by the lack of double-blind, placebo-controlled design, these results suggest that homeopathic treatment might be efficient as adjuvant in the treatment of malnutrition and further studies with larger samples and placebo-controlled must be performed.

Conclusions

The homeopathic complex used proved to be effective as adjuvant in the treatment of malnourished children, as shown by the significant proportion of children who shifted from a condition below the 3rd percentile to normal weight in the treated group.

This effect was highly significant and significant in age ranges 1-4, 5-9, and 10-14 years old. Although the difference was not statistically significant in age-range 15-19 years old, the trend for shift to normal was maintained compared to the control group.

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Uso de fórmula homeopática em pacientes pediátricos desnutridos por defeito

RESUMO

Foi realizado um estudo de intervenção com o objetivo de determinar os resultados do tratamento homeopático em crianças desnutridas por defeito com idade entre 1 e 19 anos no Policlínico San Juan, no município de Ranchuelo, em Cuba, no período dentre novembro de 2004 e dezembro de 2005, que se achavam embaixo do 3º percentil na relação peso-estatura. Um total de 99 crianças foram randomicamente divididas em dois grupos de acordo com o standard de tabelas de números aleatórios geradas no Mathcad e atribuição de números às crianças. O grupo tratado incluiu 50 crianças que receberam tratamento homeopático e o grupo controle incluiu 49 crianças que não recebera este tratamento. O critério clínico foi determinante para a aplicação do medicamente. Foram definidas as variáveis com critério de inclusão, exclusão e saída. Foram identificadas e operacionalizadas as variáveis e foi interpretada a informação colhida de ambos os grupos. Depois de um ano de acompanhamento, 42 das 50 (84%) crianças que receberam tratamento homeopático alcançaram o peso normal, enquanto que 15 das 49 (30%) que não receberam este tratamento alcançaram o peso normal.

Palavras-chave: Desnutrição infantil; Homeopatia; Estudo comparativo

Uso de fórmula homeopática en pacientes pediátricos mal nutridos por defecto

RESUMEN

Se realizó un estudio de intervención con el objetivo de determinar los resultados del tratamiento homeopático en niños mal nutridos por defecto en edades entre 1-19 años en el Policlínico San Juan, del municipio Ranchuelo, Cuba, en el período comprendido entre noviembre de 2004 a diciembre de 2005, los cuales se encontraban por debajo del 3º percentil de la relación peso-talla. Se conformaron dos grupos de un total 99 niños que se dividieron de forma aleatoria siguiendo el

estándar de tablas de números aleatorios generadas en Mathcad y la asignación de números a los niños. Conforman el grupo estudio 50 casos con tratamiento homeopático y el grupo control lo conforman 49 casos que no lo recibieron. El criterio clínico fue determinante en la aplicación del medicamento. Se definieron las variables con criterio de inclusión, exclusión y salida. Se identificaron y se operacionalizaron las variables y se efectuó la interpretación de la información obtenida de los dos grupos, dando como resultado que después de un año de seguimiento de los 50 niños que recibieron tratamiento homeopático, 42 alcanzaron el peso normal (84%) y de los 49 que no utilizó dicha medicación solo alcanzaron el peso normal un total de 15 pacientes (30%).

Palabras clave: Desnutrición infantil; Homeopatía; Estudio comparativo

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