



THE EFFECT OF VITAMIN D SUPPLEMENTATION ON RECURRENCES OF SEBORRHEIC DERMATITIS

Jenya Dimitrova

Dermatology and Venereal Diseases Department, Medical University –Varna

ARTICLE INFO

Article History:

Received 10th December, 2016

Received in revised form 7th January, 2017

Accepted 11th February, 2017

Published online 28th March, 2017

Key Words:

Seborrheic Dermatitis, Vitamin D
Supplementation, Serum 25(OH) Vitamin,
Recurrences

ABSTRACT

Seborrheic dermatitis is a chronic, erythemo-squamous disorder affecting scalp, face and mid line of the chest and back, found in 3% to 11 % of the population worldwide. There is growing evidence that vitamin D may play beneficial role in therapy of this common condition.

We studied 32 patients (16 males and 16 females) aged from 18 to 64 years with proven vitamin D deficiency (serum 25 (OH) vitamin D lower than 21ng/l) who were supplemented with 1600IU cholecalciferol per day for 3 months. Patients filled in a form with the number and duration of exacerbations of seborrheic dermatitis they experienced during the trial period.

The number of recurrences of SD during the period of vitamin D supplementation was reduced in 21 patients (65,6%). No change in the rate of worsening was found in four female and three male patients. Four patients observed an increase in the frequency of the exacerbations

Copyright©2017 Jenya Dimitrova. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Seborrheic dermatitis (SD) is a chronic, erythemo-squamous disorder affecting scalp, face and mid line of the chest and back. Epidemiological studies show prevalence of the condition between 3% and 11 % of the population (Emre et al. 2012; Gupta and Bluhm 2004). It is usually mentioned that SD is worsening during winter (Dessinioti and Katsambas 2013). There are also trials that show the therapeutic efficacy of UVB in patients with SD (Berg 1989). It can be hypothesized that at least part of the benefit of the UV light exposure was due to improved vitamin D status. Also there are reports of beneficial effect of calcipotriol and other vitamin D analogs applied topically in patients with SD (Nakayama 2000). According to our previous study, patients with exacerbated SD show vitamin D deficiency (Dimitrova 2013). The aim of this trial was to evaluate the efficacy of vitamin D supplementation on recurrences of SD in patients with proven low levels of serum 25 (OH) vitamin D.

MATERIALS AND METHODS

32 patients (16 males and 16 females) aged from 18 to 64 years with more than 6 recurrences of SD for year were included in the study.

Study was conducted from September to the end of May to exclude the possibility of significant solar exposure during the study period. None of the patients traveled abroad during the trial period. Severity of the SD was evaluated by a score presented in table 1.

The level of serum 25(OH) vitamin D of all patients was lower than 21 ng/l which is defined as deficiency according to US Endocrine society guideline (Holick MF 2012). Tables 2 and 3 show the age, month in which the patients was tested for serum 25(OH) vitamin D level and were enrolled in the study, the value of serum 25(OH) vitamin D, severity score and baseline rate of recurrences in female and male patients included in the study.

All the patients took 1600 IU cholecalciferol per day for 3 months. For the period of supplementation they were given forms to fill in the number and duration of exacerbations of seborrheic dermatitis they experienced. The number of recurrences that patients noted in their forms were then multiplied by 4 in order to make them comparable with the baseline data. For the treatment of the recurrences patients used antimycotic containing shampoo for the scalp and calcineurin inhibitor for face and body lesions. The patients were instructed not to use any local applications except in case of worsening of the condition and to apply those just until the skin condition is alleviated. All subjects gave written informed consent.

RESULTS AND DISCUSSION

All 32 patients completed the study. The median age of studied subjects was 34, 75 (32, 94 for females and 36, 56 for

*Corresponding author: **Jenya Dimitrova**

Dermatology and Venereal Diseases Department, Medical University –Varna

males). Mean severity score of women was 6, 56 compared with 8, 93 for men. The mean level of serum 25(OH) vitamin D in males was slightly lower than that in females (12, 95 and 13, 72 respectively).

The number of recurrences of SD during the period of vitamin D supplementation was reduced compared with the initial one in 21 patients (65, 6%) - 10 females and 11 males. No change in the rate of worsening was found in four female and three male patients. Four patients observed an increase in the frequency of the exacerbations.

Legend: Erythema and desquamation was evaluated by the investigator as 0-absent, 1-slight, 2-pronounced, so minimal score would be 0 and maximum 20.

Table 1 Score evaluating the severity of clinical presentations in patients with seborrheic dermatitis

Localization of clinical findings	Erythema	Desquamation
Scalp	0-1-2	0-1-2
Forehead and eyebrows	0-1-2	0-1-2
Nasolabial folds	0-1-2	0-1-2
Chin	0-1-2	0-1-2
External ear channel	0-1-2	0-1-2
Retroauricular folds	0-1-2	0-1-2
Upper chest	0-1-2	0-1-2
Upper back	0-1-2	0-1-2
Armpit/Genital folds	0-1-2	0-1-2
Eyelids	0-1-2	0-1-2

Interestingly patients who had no change or decrease of the frequency of recurrences show higher baseline mean value of 25 (OH) vitamin D – 15, 62 for female patients and 14, 68 for males. Women with no betterment from the vitamin D supplementation were with lower mean age (24, 3). On the contrary mean age of men with no decrease in recurrence rate was 42, 4. No significant difference in mean severity score between the patients with and with no effect from vitamin D supplementation was found. In table 4 are shown the age, severity score and serum 25 (OH) vitamin D values of patients with no change or increase in frequency of exacerbations of seborrheic dermatitis.

We can conclude that oral vitamin D supplementation could decrease significantly the rate of recurrences of seborrheic dermatitis in patients with established vitamin D deficiency. Patients who have not experienced such betterment were with higher mean value of baseline serum 25 (OH) vitamin D.

Table 2 Female patients enrolled in the study –baseline data

Age	Month of examination	Serum25 (OH) vit D	Severity score	Frequency of recurrences (per year) before substitution
25	1	4,8	10	4
39	3	7,17	9	8
38	11	10,71	14	12
41	12	13,3	7	8
18	3	20,22	5	8
58	10	16,18	4	4
23	9	13,6	6	12
19	12	18,65	4	8
42	2	19,19	4	8
18	10	12,53	6	8
24	11	15,27	6	4
30	3	18	4	8
41	9	10,19	8	8
40	11	11,65	5	0
52	10	11	8	4
19	11	17	5	0

According to pertinent literature this is the first study of the therapeutic efficacy of oral vitamin D intake on seborrheic dermatitis. Larger studies are needed in order to increase the statistic value and to confirm these results.

Table 3 Male patients enrolled in the study-baseline data

Age	Month of examination	Serum 25 (OH) vit D	Severity score	Frequency of recurrences (per year) before substitution
33	12	3	10	12
21	9	20,8	7	12
42	2	17,83	7	12
41	1	16	12	15
26	10	15,18	8	6
21	12	15,5	7	6
18	11	6	13	12
25	12	8	11	7
25	3	8,96	15	12
50	3	12,22	12	8
40	11	13,86	6	6
51	1	13,94	12	8
53	12	12,6	6	10
64	2	13,16	10	12
43	2	12,7	8	12
32	11	18	5	6

Table 4 Age, severity score and 25 (OH)vitamin D values of patients who had no effect form vitamin D supplementation or noticed increased frequency of exacerbations

	Age	Severity score	25(OH)vit D
Female 1 –no change	38	14	10,71
Female 2- no change	23	6	13,6
Female 3-no change	18	6	12,53
Female 4 –no change	30	4	18
Female 5 –increase	18	5	20,22
Female 6-increase	19	4	18
Mean values for females	24,33	6,5	15,62
Male 1 –no change	42	7	17,83
Male 2 –no change	40	6	13,86
Male 3 – no change	53	6	12,6
Male 4 – increase	26	8	15,18
Male 5- increase	51	12	13,94
Mean values for males	42,4	7,8	14,68

References

- Berg, M. 1989. "Epidemiological Studies of the Influence of Sunlight on the Skin." *Photo-dermatology* 6(2): 80–84. <http://www.ncbi.nlm.nih.gov/pubmed/2748434> (March 11, 2017).
- Dessinioti, Clio, and Andreas Katsambas. 2013. "Seborrheic Dermatitis: Etiology, Risk Factors, and Treatments: Facts and Controversies." *Clinics in Dermatology*.
- Dimitrova, Jenya. 2013. "Study Of The Level Of 255hydroxyvitamin D In Patients With Seborrheic DermatitIS." *Scripta Scientifica Medica* 45(1): 75–78. <http://press.mu-varna.bg/ojs/index.php/ssm/article/viewFile/345/344> (March 23, 2017).
- Emre, Selma et al. 2012. "The Association of Oxidative Stress and Disease Activity in Seborrheic Dermatitis." *Archives of Dermatological Research* 304(9): 683–87. <http://www.ncbi.nlm.nih.gov/pubmed/22699428> (March 19, 2017).
- Gupta, A K, and R Bluhm. 2004. "Seborrheic Dermatitis." *Journal of the European Academy of Dermatology and*

Venereology : *JEADV* 18(1): 13-26-20.
<http://www.ncbi.nlm.nih.gov/pubmed/14678527>
(March 9, 2017).

Holick MF, Pramyothin P. 2012. "Vitamin D: Guidelines for Subclinical Deficiency." *Curr Opin Gastroenterol*: 139–50. http://www.medscape.com/viewarticle/759781_1 (March 23, 2017).

Nakayama, J. 2000. "Four Cases of Sebopsoriasis or Seborrheic Dermatitis of the Face and Scalp Successfully Treated with 1 α -24 (R)-Dihydroxycholecalciferol (Tacalcitol) Cream." *European Journal of Dermatology* 10(7): 528–32.

How to cite this article:

Jenya Dimitrova (2017) 'The Effect Of Vitamin D Supplementation On Recurrences Of Seborrheic Dermatitis', *International Journal of Current Advanced Research*, 06(03), pp. 2446-2448.
