UNIWERSYTET MIKOŁAJA KOPERNIKA W TORUNIU
Collegium Medicum w Bydgoszczy

BANK MLEKA KOBIECEGO W.Sz.Z. w TORUNIU

Vitamin D concentration in breastfeeding women

Iwona Adamczyk[1, 2, 3], Agnieszka Pater[2], Elena Sinkiewicz-Darol[1,3], Joanna Siódmiak[2], Grażyna Odrowąż-Sypniewska[2], Urszula Bernatowicz-Łojko[1,3,4]

1. *Ludwik Rydygier Provincial Polyclinical Hospital, Human Milk Bank, Torun, Poland*
2. *Collegium Medicum of Nicolaus Copernicus University, Department of Laboratory Medicine Bydgoszcz, Poland*
3. *Human Milk Bank Fundation, Warsaw, Poland*
4. *Ludwik Rydygier Provincial Polyclinical Hospital, Department of the Newborn and NICU, Torun, Poland*

E-mail: iwona_owczarek@02.pl; agnieszka.chrapkowska@wp.pl

Background:

The hormonally active form of vitamin D, generates a number of extraskeletal biological responses what significantly influences body's homeostasis. Evaluation of vitamin D concentration and supplementing deficiency for breastfeeding women are crucial for the women to maintain health.

The purpose of the study was to measure vitamin D concentration in serum of women during reproductive season in summer and winter seasons and in breastfeeding women's serum with including the influence of supplementation.

Material and methods:

The study included women from 22 to 45 years old, divided into two groups: women in lactiation period (N=51 and N=27 respectively in summer and winter seasons) and a control group not lactiation women (N=38 and N=19 respectively in summer and winter seasons).

To evaluate the vitamin D concentration (25OH-D) in serum CLIA method.

Results:

Tab. 1. Characteristics of study participants in summer season

	Study group N= 51	Control group N=38	p<
Age [yrs]	31,4 (4,0)	32,1 (7,2)	ns
Height [m]	1,67 (0,06)	1,65 (0,06)	ns
Weight [kg]	63,8 (10,6)	66,7 (17,2)	ns
BMI	22,8 (3,3)	24,2 (5,7)	ns
Number of children	1,6 (0,8)	0,8 (0,8)	0,001
Serum Vitamin D [ng/ml]	28,4 (7,0)	27,4 (7,3)	ns
Milk Vitamin D [ng/ml] N=47	5,4 (3,3)	-	-

Tab. 2. Characteristics of study participants in winter season

	Study group N=27	Control group N= 19	p<
Age [yrs]	31,9 (4,6)	32,7 (7,9)	ns
Height [m]	1,67 (0,05)	1,66 (0,06)	ns
Weight [kg]	61,9 (9,5)	67,1 (16,6)	ns
BMI	22,1 (3,0)	24,2(5,4)	ns
Number of children	1,6 (0,8)	0,6 (0,8)	0,001
Serum Vitamin D [ng/ml]	28,6 (7,5)	28,1 (11,7)	ns

Fig. 1. Prevalence of vitamin D deficiency in the lactation group and controls

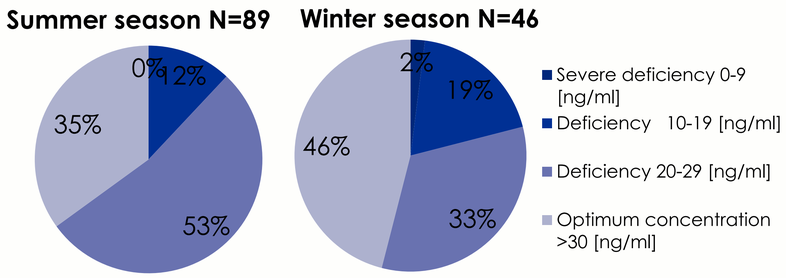


Fig. 2. Serum Vitamin D concentration in supplementing and non-supplementing women of study group in summer and winter season

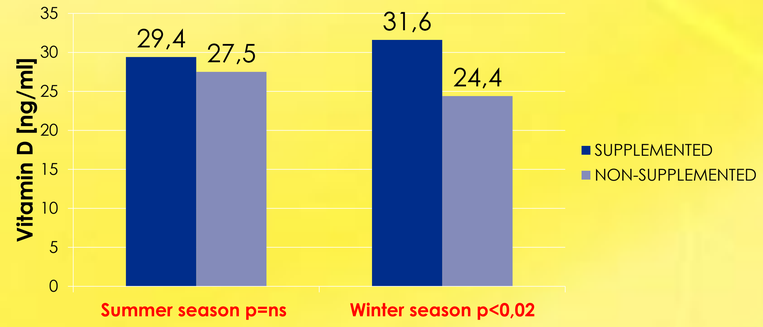
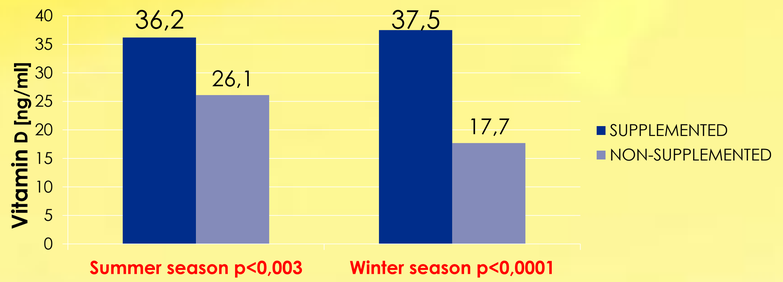


Fig. 3. Serum Vitamin D concentration in supplementing and non supplementing controls in summer and winter season



Tab. 4 . Serum Vitamin D concentration in supplementing and non supplementing women of the lactation group and controls in summer and winter season

SUPPLE-MENTED	Study group N= 24	Control group N= 5	p<	NON-SUPPLE-MENTED	Study group N= 27	Control group N= 33	p<
Serum Vitamin D [ng/ml] SUMMER	29,4 (7,9)	36,2 (5,2)	0,08	Serum Vitamin D [ng/ml] SUMMER	27,5 (6,2)	26,1 (6,7)	ns
SUPPLE-MENTED	**Study group N= 16**	**Control group N= 10**	**p<**	**NON-SUPPLE-MENTED**	**Study group N= 11**	**Control group N= 9**	**p<**
Serum Vitamin D [ng/ml] WINTER	31,6 (6,4)	37,5 (7,6)	0,05	Serum Vitamin D [ng/ml] WINTER	24,4 (7,5)	17,7 (6,1)	0,06

Conclusions

Most studied women in the reproductive period have deficiency of vitamin D. Supplementation of vitamin D in non lactiation woman results in higher serum concentration of that vitamin while in lactation woman it does not influence the milk's vitamin D concentration.