RELATION BETWEEN SERUM 25-HYDROXY-VITAMIN D LEVELS AND TSH RECEPTOR ANTIBODY SEROPOSITIVITY

Fatma Saglam[1], Derya Koseoglu[1], Dilek Berker[1], Serdar Guler[1]

[1]: Ankara Numune Research and Training Hospital, Department of Endocrinology and Metabolism. Ankara-TURKEY.

OBJECTIVE

Vitamin D is an immune-modulator that may play a role in thyroid related autoimmunity. But the relation between Vitamin D and Graves' disease (GD) is not well defined yet. The aim of this study was to investigate the association of 25-hydroxy-vitamin D (25[OH]D) levels and TSH receptor antibody (TRab) levels in GD.

METHOD

A total of 429 GD patients were analyzed retrospectively. 122 of 429 patients had vitamin D levels were enrolled in this study. The levels of 25(OH)D and TRAb were examined. Vitamin D deficiency was defined as a 25(OH)D below 20 ng/ml and insufficiency as a 25(OH) D of 20-29 ng/ml. Normal range was accepted as 30 ng/ml and above. TRAb negativity was defined as 0-13 U/L and positivity was defined as 14 U/L and above. Statistical analyses were conducted in SPSS (version 17.0). Chi-square and Pearson correlation tests were used and P<0.05 were accepted as statistically significant.

RESULTS

Among 122 patients mean age was 42.9 ± 14 years of age. 72.1% of them (n=88) were females and 27.9% (n=34) were males. TRAb seropositivity was found in 69.7% (n=85). TRAb titres' median was 16 U/L (minimum=0 and maximum=295 U/L). Vitamin D deficiency was detected in 83.6% (102/122) of the patients. Vitamin D insufficiency was found in 11.5% (14/122) of the patients. Normal vitamin D levels were found in 4.9% (6/122) of the patients. Vitamin D deficiency was found as higher in TRAb-positive GD patients (75.5%, 77/102) than that of TRAb-negative patients (24.5%, 25/102)(X^2=12.176, df=2, p=0.003, Fisher's exact test) (Table 1).

In terms of vitamin D insuffiency, however, there was no difference between TRAb-positive and negative GD patients (X^2=4.004, df=1, p=0.059, Fisher's exact test) (Table 2).

Table 2. Vitamin D deficiency and insufficiency in connection with TRAb seropositivity

	Deficiency (n=102)	Insufficiency (n=14)	Total (n=116)
TRab	**n (%)**	**n (%)**	**n (%)**
Positive	77 (75.5)	7 (50.0)	85 (72.4)
Negative	25 (24.5)	7 (50.0)	32 (27.6)

There was also found a significant negative correlation between TRAb titres and vitamin D levels (Pearson's rho=-0.193, p=0.033) (Figure 1).

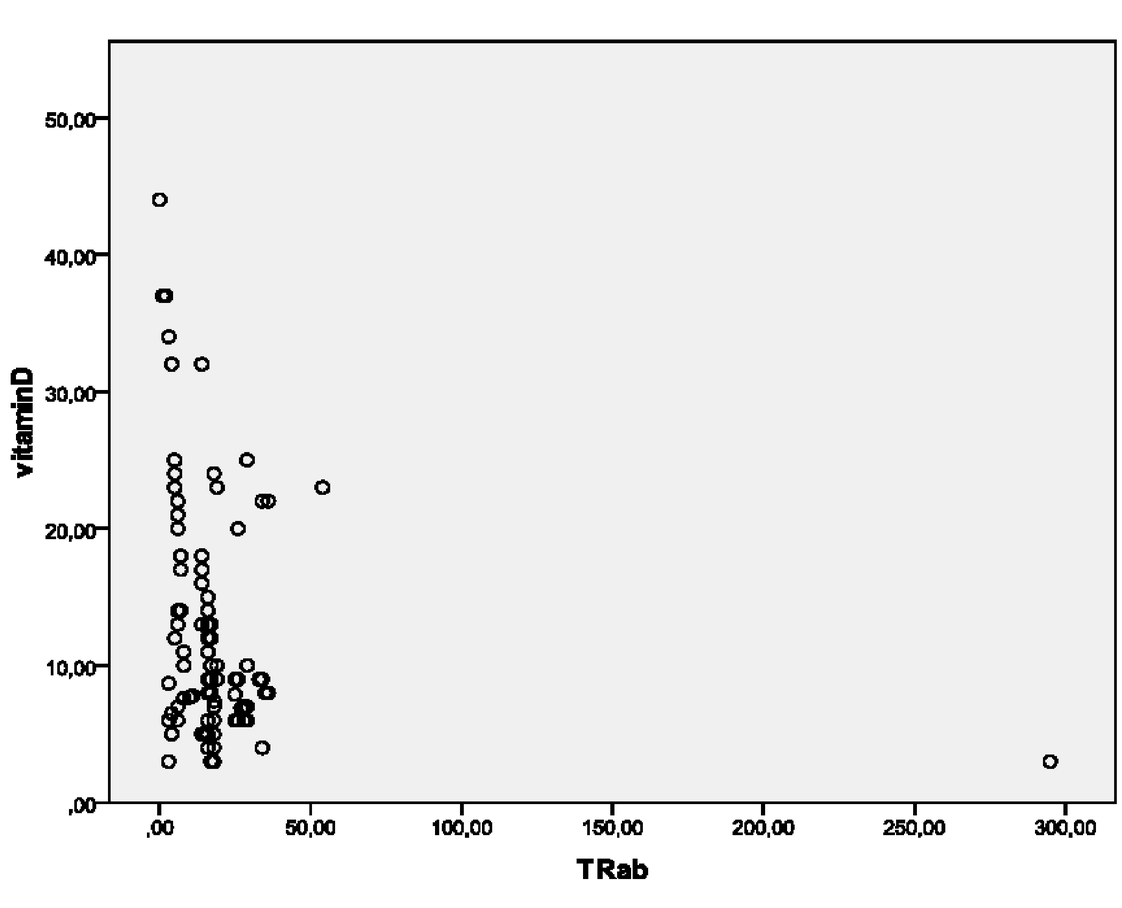

Figure 1. A significant negative correlation between vitamin D and TRab levels

Table 1. Vitamin D categories and its relation with TRAb seropositivities

	Deficiency (n=102)	Insufficiency (n=14)	Normal (n=6)	Total (n=122)
TRab	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Positive	77 (75.5)	7 (50.0)	1 (16.7)	85 (69.7)
Negative	25 (24.5)	7 (50.0)	5 (83.3)	37 (30.3)

CONCLUSION

Low vitamin D status is associated with increased TRAb seropositivity in GD. Further research is necessary to fully elucidate the importance of vitamin D in the case of GD.