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A single centric non-interventional observational study to definecorrelation between Vitamin–D levels and Thyroid levels in newly diagnosed confirmedhypothyroid patients and Normal Healthy Volunteers

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ABSTRACT

Background: The thyroid gland, shaped like a butterfly is located in the midline of the neck inferior andadjacent to our neck muscles, but anterior to the trachea or airway.Although the thyroid is one single gland it is anatomically divided into right and left lobes,with the middle of the gland between the two lobes referred to as the isthmus. Within thethyroid, there are four small independent glands that control calcium metabolism, known asthe Parathyroid glands, due to their anatomical coexistence within the thyroid.
The principal function of the thyroid gland is the synthesis and secretion of thyroidhormones, which circulates in the body through the blood stream and exert their effectsthrough interaction with specific cellular proteins known as thyroid hormone receptors. Thereare two principal thyroid hormones made and secreted by the thyroid, thyroxine (commonlyknown as T4) and triiodothyronine (T3). The majority of hormone secreted by the thyroidis T4, but the major active form of thyroid hormone is T3. T4 that circulates in the blood canbe converted into T3 in many tissues by a specific enzyme known as a deiodinase, thatremoves one of the 4 iodine molecules from T4.
Aim: The main aim of this study is to determine the vitamin D (Vit-D) insufficiency and TSHlevels among newly diagnosed confirmed hypothyroid patients and Normal HealthyVolunteers

Method:
Primary Objective:
To provide the evidence pointing towards vitamin D significant role to maintain Thyroidlevels in confirmed hypothyroid patients.
Secondary Objective:
- To analyze the Vitamin- D levels in confirmed hypothyroid study population.
- To analyze the Vitamin- D levels in Normal Population
- To correlate Vitamin–D levels and Thyroid levels study population

Inclusion Criteria:
- Male or female patients with 18 years or above
- Patients who have provide written Informed Consent
- Patients with previously diagnosed with hypothyroidism and normal Healthy Volunteers for comparison
- BMI (Body Mass Index)
- Complete TSH Profile report available within past monthLaboratory Test (Vitamin D report)

Exclusion Criteria: None
Keywords: Thyroid patients; Observational data collection, Vitamin -D Levels.

RESULTS & SUMMARY:

The summary and conclusion for the below mentioned study is as follows

For the study title “A single centric non-interventional observational study to definecorrelation between Vitamin–D levels and Thyroid levels in newly diagnosed confirmedhypothyroid patients and Normal Healthy Volunteers” we have collected the data of total 10populations after getting the institutional Ethics committee approval.

In the total study population 5 subjects are confirmed Hypothyroidism patients and 5subjects are Normal Healthy Volunteers. All the 10 subjects are accepted to participate in thestudy and signed in Informed Consent Form and accepted to donate their clinical data andrequired medical report.In this Non–Interventional study we collected the following data and analyzed and concludedthe following

Total No of Population: n =10

Group: A (Diseased Population) n= 5

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Group B: (Normal Healthy Volunteers) n =5
We have collected the following data
Values of T3,T4.TSH and Vitamin-D

CONCLUSION:

Based up the above study population data observed and concluded that there is a drasticchange in vitamin D levels between two groups i.e. when compared with healthy volunteersthere is a deficiency of Vitamin D levels for Thyroid patients, finally concluded that VitaminD is correlated with Thyroid Hormone

GROUP A (DISEASED PATIENTS)																	
Sno	Subject Initias	Gender	Date of Birth	Age	Date of icf	Date of Enrollement	Height	Weight	BMI	Temp	BP	RR	PR	T3	T4	TSH	Vit D Value
1	M-M	F	01-01-1960	58	10-12-2018	10-12-2018	1.53	89	38.0	98.6	120/80	24	96	143	13.6	22.5	16
2	K-S	F	01-01-1964	54	10-12-2018	10-12-2018	1.46	56	26.3	98.3	130/80	22	97	154.5	14.6	52.4	13
3	K-O	F	01-01-1955	23	11-12-2018	11-12-2018	1.71	75	25.6	98.4	120/80	23	95	135.2	15.7	15.7	15
4	YKC	M	01-01-1990	28	16-12-2018	16-12-2018	1.67	74	26.5	97.8	125/80	24	94	145.6	16.4	19.2	17
5	KJS	M	01-01-1962	56	16-12-2018	16-12-2018	1.65	69	25.3	98.6	120/85	26	93	170.8	18.2	25.2	14

GROUP B (HEALTHY VOLUNTARYS)																	
Sno	Subject Initias	Gender	Date of Birth	Age	Date of icf	Date of Enrollement	Height	Weight	BMI	Temp	BP	RR	PR	T3	T4	TSH	Vit D Value
1	BSC	M	01-01-1988	30	17-12-2018	17-12-2018	1.69	75	26.3	97.5	125/80	24	94	200	12.5	3.5	40
2	B-S	M	01-01-1991	27	19-12-2018	19-12-2018	1.68	80	28.3	98.6	120/80	25	96	180	7.5	3.2	41
3	K-S	M	01-01-1988	30	19-12-2018	19-12-2018	1.72	76	25.7	98.4	120/80	26	95	190	9.3	2.9	38
4	M-G	M	01-01-1988	30	22-12-2018	22-12-2018	1.67	78	28.0	97.6	120/80	23	95	187	11.2	3.1	84
5	K-V	M	01-01-1994	24	22-12-2018	22-12-2018	1.7	73	25.3	98.2	120/85	24	94	179	10.8	2.8	42

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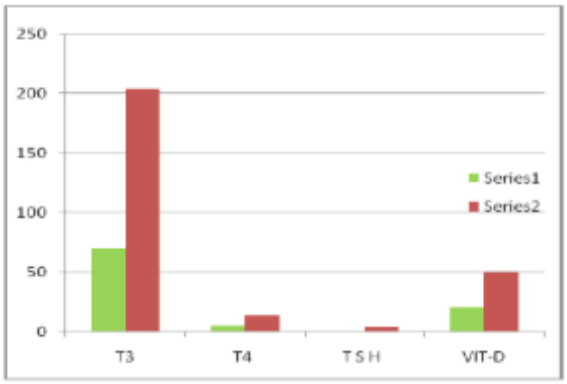
TABLE-3 ASSESSMENT VALUES OF GROUPA/DISEASED PATIENTS										
Height	*Weight*	*BMI*	*Temp*	*BP*	*RR*	*PR*	*T3*	*T4*	*TSH*	*Vit D Value*
1.53	89	38.0196	98.6	120/80	24	96	143	13.6	22.5	16
1.46	56	26.2713	98.3	130/80	22	97	154.5	14.6	52.4	13
1.71	75	25.6489	98.4	120/80	23	95	135.2	15.7	15.7	15
1.67	74	26.5338	97.8	125/80	24	94	145.6	16.4	19.2	17
1.65	69	25.3444	98.6	120/85	26	93	170.8	18.2	25.2	14
AVERAGE		28.4			AVERAGE		149.8	15.7	27.0	15.0

TABLE-4 ASSESSMENT VALUES OF GROUP B/ HEALTHY VOLUNTEERS										
Height	Weight	BMI	Temp	BP	RR	PR	T3	T4	TSH	Vit D Value
1.69	75	26.25958	97.5	125/80	24	94	200	12.5	3.5	40
1.68	80	28.34467	98.6	120/80	25	96	180	7.5	3.2	41
1.72	76	25.68956	98.4	120/80	26	95	190	9.3	2.9	38
1.67	78	27.96802	97.6	120/80	23	95	187	11.2	3.1	84
1.7	73	25.25952	98.2	120/85	24	94	179	10.8	2.8	42
AVERAGE		26.7			AVERAGE		187.2	10.3	3.1	49.0

Graphical Representation of Normal Ranges of Thyroid Profile



NORMAL RANGES OF THYROID PROFILE & VIT -D			
PARAMETER	MINIMUM	MAXIMUM	UNITS
T3	70	204	ng/ml
T4	5.13	14.06	µg/Dl
T S H	0.4	4.5	µIU/ml
VIT-D	20	50	ng/ml

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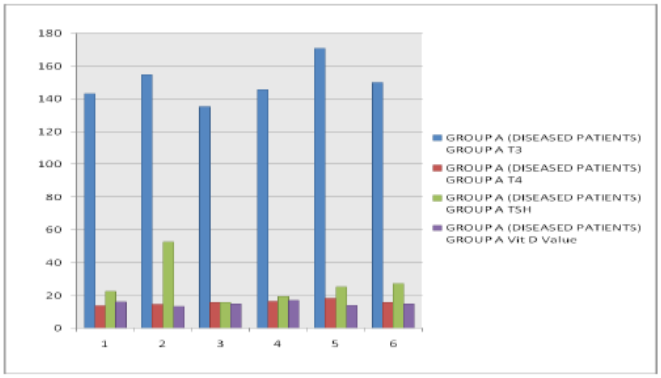
Graphical Representation of Average Values of Thyroid and Vit D Levels in Diseased Patients



- **GROUP A (DISEASED PATIENTS)**
- ***GROUP A***

T3	*T4*	*TSH*	*Vit D Value*
143	13.6	22.5	16
154.5	14.6	52.4	13
135.2	15.7	15.7	15
145.6	16.4	19.2	17
170.8	18.2	25.2	14
149.8	**15.7**	**27.0**	**15.0**

- ***AVERAGE VALUES***

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