EVALUATION AND INFLUENCE OF VITAMIN D LEVELS IN THE CRITICALLY ILL PATIENT.

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Background and importance. Critically care patients (CCP) show a tendency of very low vitamin D (VitD) levels (<20ng/dl) which is associated with increased morbidity and mortality. Many CCP have a non-functioning gastrointestinal tract and are usually treated with parenteral nutrition (PN). VitD replacement when its absorption is compromised is an added complication and there are controversies about the best option to perform it according to factors such as bioavailability and route of administration.

Aim and objetive. To analyze VitD levels and to evaluate the existing differences in the analytical request in CCP with PN. To study the oral use of VitD (Calcifediol®) as a restorative treatment option.

Material and methods. Retrospective observational study of CCP with PN during 2023 to August 2024.
From the clinical history and the PN formulation program, the following were recorded in a database: all VitD blood levels; evolution and reason for suspension of PN; date of oral administration of VitD.
Bibliographic review with the keywords, VitD and CCP.

Results. A total of 172 CCP were collected, as described in Table 1.

The days with PN had a wide interval, as well as the days elapsed until levels were determined for the first time.

Levels were requested in 37% CCP in a period from 2 days before up to and including the same day of finishing PN. The first serum VitD level of 89 patients is in a high deficiency range 6.2±3.8ng/dl (48.2% CCP without data measured during PN); its monitoring presented a great variability.

Calcifediol® was administered in 11 CCP. Serum VitD levels increased in 63.6% and in the rest no subsequent controls were requested.

Table 1. DESCRIPTION OF PATIENTS

PATIENTS	172 (111 men, 61 women)	
AVERAGE AGE	63,2 years	
AVERAGE BMI	25,2 kg/m^2	
PN MAIN INDICATIONS	Surgical complication (25%) Pancreatitis (10%)	
PN AVERAGE DAYS DURATION	14,3 days (1-123 days)	
AVERAGE DAYS EXPIRED UNTIL REQUEST FOR LEVELS	10,5 days (0-76 days)	
AVERAGE AND STANDARD DEVIATION LEVELS MEASURED DURING PN	6,2 ± 3,8 ng/dl	
VITAMIN D LEVELS PROFILE	SEVERE IMPAIRMENT(<7,6ng/dL)	65 (37,8%)
	IMPAIRMENT (7,6-20ng/dL)	25 (14,5%)
	(>20ng/dL)	0 (0%)
	NOT MEASURED	82 (47,7%)
NUMBER OF PATIENTS WHOSE LEVELS WERE MEASURED...	ON THE SAME DAY AS THE END OF THE NP	14 (15,6%)
	ON THE PREVIOUS DAY AS THE END OF THE NP	12 (13,3%)
	TWO DAYS BEFORE AS THE END OF THE NP	7 (7,8%)
REASON FOR END PN	DEATH	45 (26,2%)
	PROGRESSION TO ENTERAL NUTRITION	50 (29%)
	PROGRESSION TO ORAL NUTRITION	77 (44,8%)

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Conclusions. It is clear the high prevalence of severe VitD deficiency in CCP and the need to implement a joint protocol with the critical care service to achieve standardization of the request and normalization of VitD levels considering Calcifediol® as one of the few presentations of VitD available and its high absorption rate.