

Analysis of Hypothyroidism in Patients Admitted to Internal Medicine Wards in Spain 2005-2012

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INTRODUCTION

Hypothyroidism (hT) is a very common disease, however few studies reflect its prevalence in Spain. Prevalence in Spain has been estimated through thyroid hormone intake ranging between 0.5% -1.4% and appears to be rising. There is increasing evidence suggesting a relationship between hT, prognosis, cardiovascular disease and total mortality. The aim of our study was to evaluate hT among patients discharged from all internal medicine wards in Spanish hospitals over a period of several years, to evaluate its impact on prognosis of inpatients, its association with other comorbidities and frequency of encoding compared to its actual prevalence.

METHODS

Information from the Spanish national minimum basic data set of discharged patients who had the diagnosis of hT from all internal medicine (IM) departments of Spanish National Health System between 2005 and 2012 were analysed (ICD-9: 243, 244). A descriptive data analysis was conducted comparing the diagnosis codes and administrative variables of patients with and without hT. The chi-square test was used for qualitative variables and the Student's t test for quantitative variables. A bivariate analysis was used to detect statistical differences in the mortality of both groups, as well as mean age, Charlson index, average length of stay, readmissions and comorbidities. A multivariate logistic regression analysis was performed, taking the increase in in-hospital mortality as the dependent variable, and age, gender, comorbidity according to the Charlson index and hT as independent variables. SPSS software package 22.0 was used for statistical analysis.

RESULTS

Table 1. Characteristics of the patients

	hT	NO hT	TOTAL
AGE (years)	74.34 (SD 14.3)	77.3 (SD 17.12)	
MEN	24.2%	53.8%	
WOMEN	75.8%	46.2%	
STAY (days)	9.73	9.92	
READMISSIONS	14.3%	13.3%	
TOTAL	141616	3842917	3984533

PREVALENCE 3.6%

Figure 1. Comorbidities associated with hT

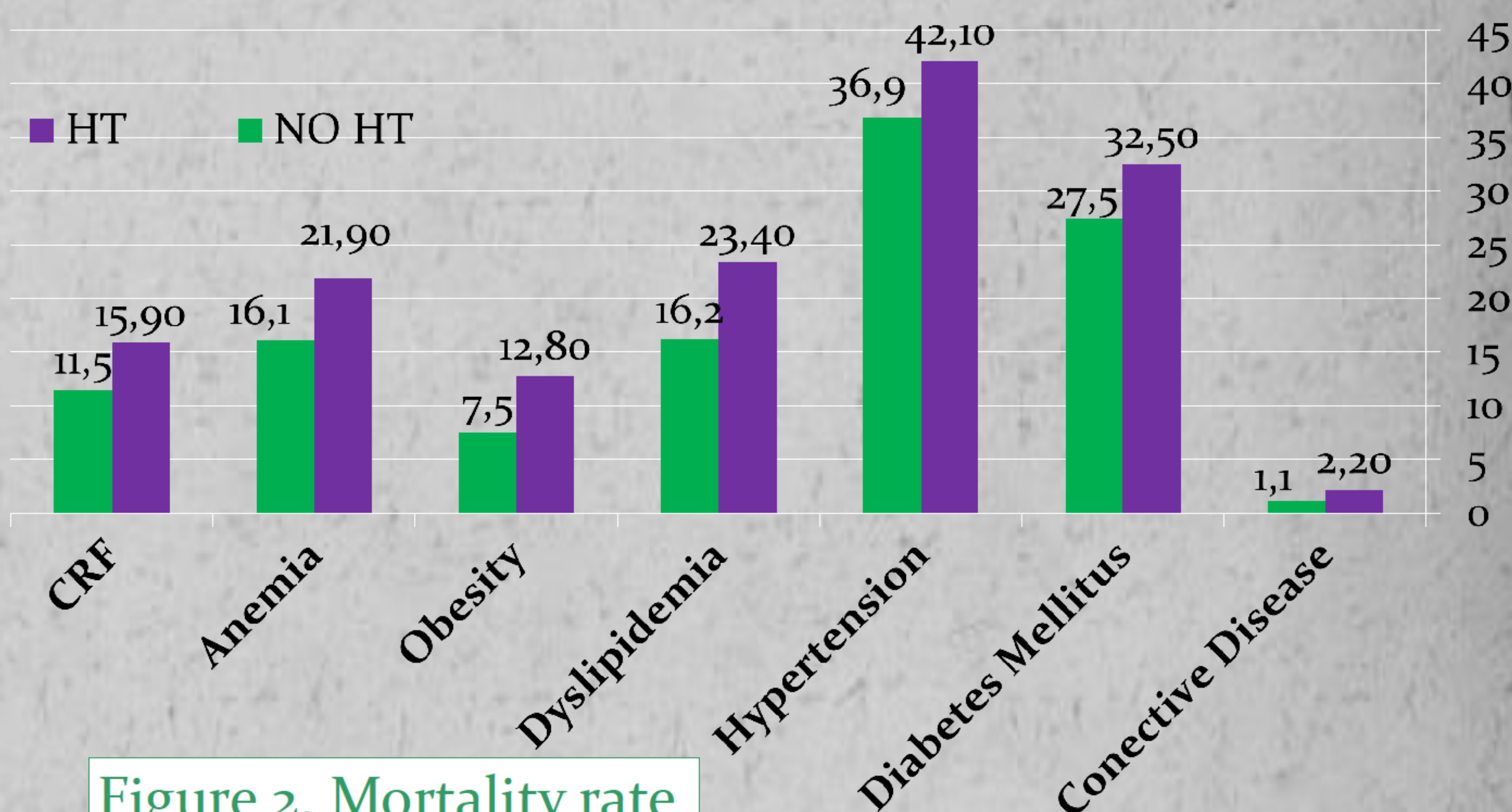


Figure 2. Mortality rate

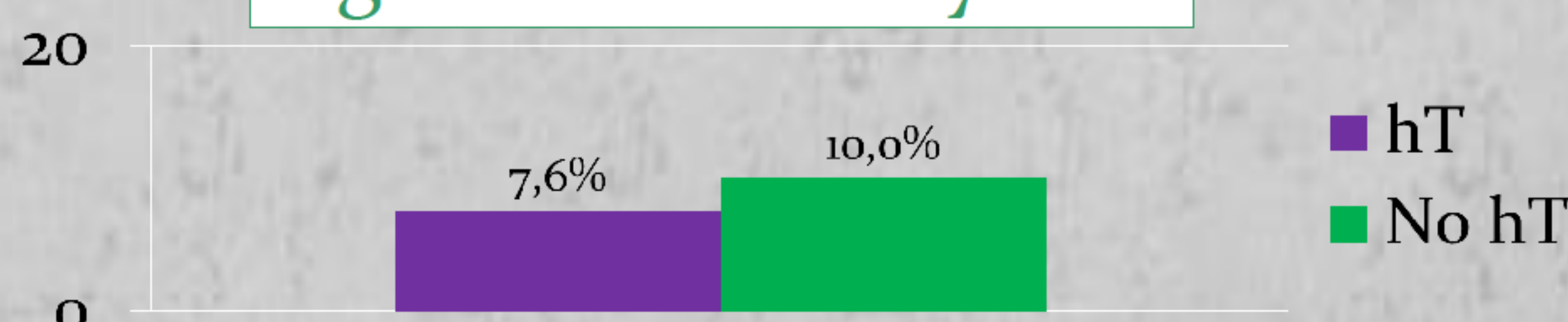


Table 2. Mortality rate in hypothyroid patients

	OR	IC 95%	P
MORTALITY RATE	0.71	0.70-0.73	p<0.05
MORTALITY RATE ADJUSTED BY AGE	1.052	1.052-1,53	p<0.05
MORTALITY RATE ADJUSTED BY COMORBIDITIES CHARLSON INDEX	1.246	1.245-1.248	p<0.05

CONCLUSIONS

We performed a retrospective study of four million hospital discharges from IM wards, including more than 140,000 hypothyroid patients. Hypothyroidism was associated with cardiovascular risk factors as well as other co-morbidities (anemia, kidney failure and connective tissue diseases). Surprisingly in the hT group there was a lower mortality rate during admission. Our study has some bias: We are lacking TSH and thyroid hormone levels, cause of death or medical treatment data, but the large number of patients provides a strong statistical power for our conclusions. Some authors suggest that the increase in TSH levels could have a short-term protective role (during hospital admittance) expressed through a reduced mortality in these population. However, the retrospective design of our study does not allow going further. It is possible that a reduced catabolism could benefit the course of some critical processes demanding high-energy expenditures such as infections or recovery from major surgeries. More prospective studies analyzing the prognostic role of hT during hospital admission are necessary, especially in some pathologies like heart failure.

