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ABSTRACT BOOK

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Thalassemias and Hemoglobinopathies

C019

PULMONARY DYSFUNCTION IN THALASSEMIA MAJOR AND CORRELATIONS WITH BODY IRON STORES

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Background: Although abnormalities in pulmonary function in thalassemia major (TM) patients have been described since 1980, the exact pathogenetic mechanism for the development has not been elucidated. Furthermore, literature data are, to some extent, contradictory regarding the type of lung dysfunction: even if the majority describes a restrictive pattern, some have found a predominant obstructive disease. These discrepancies could be attributed to the heterogeneity of the studies as well as to the multifactorial nature of the pathogenesis. *Aims:* The aim of this study was to evaluate the prevalence and pattern of pulmonary dysfunction in adult TM patients and to investigate possible correlations with iron parameters (serum ferritin and heart and liver T2* values). *Methods:* We retrospectively analyzed 73 TM patients followed at our Rare Disease Center at Policlinico Hospital in Milan, who performed pulmonary function test (PFT) between January 2012 and December 2014. All patients underwent body plethismograph and almost all of them (63 patients) carbon monoxide diffusion (DLCO, single breath method). We also performed complete blood tests and T2* MRI to assess myocardial and liver iron load. *Results:* Overall 73 TM patients (24 males, 49 females) underwent PFT. Mean age was 37±7 years. Restrictive lung disease was present in 26 (35.6%) patients associated with obstructive lung disease in 2 of them. Serum ferritin levels were higher in patients with restrictive pulmonary pattern compared to patients with normal pulmonary function (1526 ng/ml *vs* 975.17 ng/ml, p <0.05). Restrictive lung disease did not correlate with cardiac or liver iron overload. No significant differences were observed in PFT considering age. Twenty-five (25/63, 39.7%) patients had decreased DLCO after correction for lung volume and hemoglobin. No significant correlation was observed between DLCO and ferritin or MRI liver or cardiac T2*values. *Conclusions:* In our data restrictive pattern was predominant in TM patients; we observed a correlation with serum ferritin levels suggesting that iron, particularly its chronic effect, could play a role in the pathogenesis of pulmonary disease in thalassemia. However, as for literature, we could not find a correlation between restrictive pulmonary pattern and heart or liver iron overload. It is possible that differences in iron kinetics and local acting factors as well as the chelation history may underlie these results.

C020

CHRONIC ADMINISTRATION OF HYDROXYUREA AND OUTCOMES IN PATIENTS WITH SICKLE CELL DISEASE AT A SINGLE REFERRAL INSTITUTION

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Introduction: Since HU has been approved for patients with SCD, it is not clear what proportion is taking a therapeutic dose (≥15mg/kg/day) or whether those who were treated with subtherapeutic doses (<15mg/kg/day) benefit from HU. We conducted this analysis to answer these important questions in a single center in Palermo. *Methods:* Patients were enrolled at the Haematology Department of Ospedale V. Cervello between January 2000 and April 2014. Laboratory pa and frequency of vaso-occlusive crisis (VOC) and acute chest s (ACS) were recorded. Blood counts, fetal hemoglobin (H changes in SCD complications were compared between the last visits and across 3 groups: patients who never took HU w bined with those who suspended HU (no HU group, n=50, 3 <15mg/kg (n=30, 21%); or HU ≥15mg/kg (n=60, 43%). *Resu* were a total of 140 patients: 25 HbSS, 54 HbS 0thal, and 61 H Median follow-up was 6.6 years. The median age was 35 yea 0.4-61 years). 28% of patients never took HU, and 8% suspe treatment during the follow-up. Among patients taking <15m at first visit, about half stayed in the same dose range (<15mg and half increased to the ≥15mg/kg dose range. Among patie ≥15 mg/kg, 17% decreased to <15mg/Kg/day due to cytope stayed on the ≥15 mg/kg. White blood cell (WBC) counts we in both HU groups, but comparing first and last visits, the c WBC within each group was insignificant (P all >0.05, Table larly, the change in total hemoglobin levels within each group insignificant (P all >0.05). HbF decreased in the no HU group. treatment groups had modest increases in HbF (P=0.004, 0.0 respect to SCD complications, the no HU group had less sever at the first visit, with lower percent of subjects with and fewer of VOC and ACS (Table 2). While there was an increase in b and ACS with time, this increase was not statistically signific HU treatment groups had a significant reduction in both comp (p<0.0001 in both), and the magnitude of reduction was sim *clusions:* About one third of patients with SCD never took or d ued HU. While these patients may have less severe disease their rates of complications increased during follow-up. Amo taking HU, dose adjustment was common. HU increased H associated with reducing VOC and ACS.

Table 1. Hematologic parameters based on HU status.

	First Visit			Last Visit		
	NO HU	HU <15mg/kg	HU >15mg/kg	NO HU	HU <15mg/kg	HU >15
WBC (k/uL)	11.2	8.74*	10.9	10.7	7.8*	8.3
Hgb (g/dL)	10.0	10.2	10.0	10.2	9.7	9.9
HbF (%)	11.9**	9.4*	10.7*	7.7	11.7*	12.8

*P<0.05 compared to no HU group
**includes 4 subjects with hereditary persistent of HbF and 2 children aged 3 months.

Table 2. SCD complications based on HU status.

	VOC				ACS			
	% of subjects		Crisis per patient per year		% of subjects		Mean ep per pati	
	F V	L V	F V	L V	F V	L V	F V	
No HU	60	70	2	2.5	22	28	0.2	
HU<15mg/kg	90	56.6	4.3*	1.2*	50	20	0.7*	
HU>15mg/kg	96.6	60	4.1*	1.1*	51	25	1.1*	

FV, first visit; LV, last visit
* P<0.05 compared to no HU group

C021

STABLE AND FULL PRODUCTION OF FETAL HAEMOGLOBIN AFTER ALLOGENEIC MARROW TRANSPLANT IN PATIENTS WITH THALASSAEMIA MAJOR: CLINICAL REMISSION WITHOUT TRANSFUSION SUPPORT

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Introduction: High fetal haemoglobin (HbF) levels ameliorate r and mortality in Sickle Cell Anaemia (SCA) and β-thalassae variability of HbF levels is genetically controlled by multiple g recent studies provide new insight into the molecular mecha order to induce the HbF production in adult haemopoietic promising therapeutic approach to ameliorate the severity hi of HbF ameliorate the severity of the β-disorders. A strong s such novel approaches comes from recent clinical observation