Letter to the Editor

The Incidence of Alpha-Thalassemia in Antalya-Turkey

To the Editor,

Although a-thalassemia is present throughout Southeast Asia, its distribution is heterogenous, attaining frequencies of 20-40%. The incidence of α-thalassemia trait was found to be 0.24% and annually 4500 babies with α-thalassemia hydrops fetalis and 13.000 babies with Hb H disease are born in the world. There are two common abnormal α-thalassemia, the severe α-thalassemia-1 with a deletion is 17.5-20 kb, the other one is the mild α-thalassemia-2 with common -4.2 and -3.7 kb deletions[1]. In Mediterranean region, $-\alpha^{3.7}$ and $-\alpha^{4.2}$ in Sardinia and $-\alpha^{3.7}$ in Greek are the most prevalent molecular defects[2,3].

The incidence of b-thalassemia trait has been reported to be around 2.1% in Turkey. Although a-thalassemia is rare, more frequently hemoglobin H disease has been observed in south of Turkey[4]. The molecular basis of Hb H disease was studied and mutataions $-\alpha^{3.7}$, $-\alpha^{4.2}$, $--^{MED-I}$ and $-\alpha^{20.5}$ were found to be responsible for the disease[5,6].

The b-thalassemia short program cannot quantify accurately certain Hb molecules, thus α-thalassemia short program is used to quantify Hb Bart's to detect α-thalassemia in cord blood.

The highest incidence of b-thalassemia trait in Turkey has been reported as 11.7% in Antalya district, but there is no publication on the incidence of α-thalassemia in this region[7]. The purpose of this study is to determine the incidence of a-

Table 1. Hematological findings in new borns with α-thalassemia

	Hb Bart's	Hb	Hct	RBC	MCV	MCH	MCHC	RDW	Rtc
No	%	g/dL	%	x 10^6/dL	fl	pg	g/dL	%	%
1	7.1	14.9	47.7	4.49	106.2	33.2	31.2	18.7	3.23
2	3.3	14.7	45.0	4.2	112.2	36.6	32.6	18.1	3.19
3	3.1	13.7	45.0	3.78	119.2	36.3	30.4	18.6	2.78
4	2.3	14.9	43.7	4.0	109.9	37.1	34.1	19.0	4.23
5	2.1	19.1	60.3	5.13	117.5	37.2	31.7	17.0	3.19
6	2.0	17.4	53.9	4.57	118.0	38.2	32.3	18.2	5.84
7	1.9	15.7	45.6	4.25	107.1	36.9	34.5	18.2	3.34
8	1.7	16.2	48.7	4.38	111.2	37.0	33.2	19.9	4.03
9	1.2	16.3	46.4	4.57	102.0	35.6	35.1	18.1	3.1
10	1.1	16.5	51.5	4.55	113.3	36.2	31.9	17.2	2.54
11	1.1	15.7	47.1	4.47	105.2	35.0	33.3	17.6	4.01
12	1.1	16.3	50.4	4.53	111.1	35.9	32.3	21.2	4.32
13	1.1	16.4	45.7	4.62	106.4	38.2	33.4	18.4	4.28
mean	2.23	15.98	48.53	4.42	110.71	36.41	32.76	18.47	3.69
± SD	1.63	1.34	4.58	0.32	5.31	1.33	1.33	1.11	0.87

thalassemia by screening of neonatal cord blood samples in Antalya.

Cord blood specimens, carefully collected to avoid contamination by maternal blood, were obtained from 205 newborns in the Department of Obstetrics and Gynecology at Antalya State Hospital. Hematological parameters were determined using an automatic cell counter (Coulter, MAX-M). Quantitation of Hb Bart's was performed by the α-thalassemia short (ATS) program on the Bio-Rad VARIANT, a fully automated HPLC system that uses double wave-length detection (415 and 690 nm). The following reference ranges were used for interpretation of the results; Hb Bart's level < 1%: normal, 1-3%: α-thalassemia-2, 3-10%: α-thalassemia-1, 15-30%: hemoglobin H disease and 80-100%: Hydrops Fetalis[8].

In 13 out of 205 cord blood samples α-thalassemia was found (0.63%), 10 of them were diagnosed α-thalassemia-2 and 3 were a-thalassemia-1. The Hb Bart's, Hb, Hct, RBC, MCV, MCH, MCHC, RDW and Rtc levels in newborns are shown in Table 1.

As conclusion, in spite of incidence of β-thalassemia trait is very high level, the incidence of α-thalassemia trait was found low level (0.63%) in Antalya district.

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