**TABLE 1** Summary of globin genotypes found in 97 infants with thalassemia minor

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| --- | --- | --- | --- |
| **Classification (%)** | **Type of thalassemia minor** | **Genotypes** | **Number (%)** |
| **α-globin** | **β-globin** |
| α-globin mutationsn = 39 (40.1) | - α+-thalassemia trait  | - α3.7/αα or - α4.2/αα | β/β | 24 (24.7) |
| - Hb CS trait | αCSα/αα | β/β | 10 (10.3) |
| - α0-thalassemia trait  | - - SEA/αα | β/β | 5 (5.1) |
| β-globin mutations n = 45 (46.3) | - Hb E trait | αα/αα | βE/β | 40 (41.1) |
| - homozygous Hb E | αα/αα | βE/βE | 4 (4.1) |
| - β-thalassemia trait | αα/αα | βT/β | 1 (1.1) |
| Combined α- and β-globin mutationsn = 13 (13.6) | - α+-thalassemia trait with Hb E trait | - α3.7/αα  | βE/β | 10 (10.3) |
| - α0-thalassemia trait with Hb E trait | - - SEA/αα | βE/β | 1 (1.1) |
| - α+-thalassemia trait with β thalassemia trait | - α3.7/αα | βT/β | 1 (1.1) |
| - homozygous Hb E with Hb CS trait | αCSα/αα | βE/βE | 1 (1.1) |

Note: Hb CS, Hb Constant Spring is due to a termination codon mutation, TAA>CAA in α2 gene

**TABLE 2** Clinical and laboratory characteristics of 206 infants with and without thalassemia minor

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| --- | --- | --- | --- |
| **Characteristics** | **Infants without thalassemia minor (n = 109, 53%)** | **Infants with thalassemia minor (n = 97, 47%)** | ***p*** |
| ***Clinical characteristics*** |
| Age in months - mean (SD)- median (range) | 8.2 (1.9)9 (6-12) | 8.3 (2.0)9 (6-12) | 0.736 |
| Male [n, (%)] | 62 (56.9) | 52 (53.6) | 0.675 |
| Weight in kg [mean, (SD)] | 8.5 (1.1) | 8.4 (1.2) | 0.807 |
| Length in cm [mean, (SD)] | 70.2 (3.8) | 70.7 (3.7) | 0.356 |
| Weight-for-length z-score (SD)- normal [n, (%)]- underweight [n, (%)]- overweight [n, (%)] | 0.10 (1.11)104 (95.4%)1 (0.9%)4 (3.7%) | -0.11(1.27)86 (88.7%)5 (5.2%)6 (6.2%) | 0.2130.130 |
| History of anemia and/or thalassemia in family  | 14(12.8%) | 42(43.3%) | < 0.001\* |
| ***Laboratory characteristics*** |
| Ferritin, ng/mL- mean (SD)- median (range) | 49.3 (37.0)42.5 (3.5-170.6) | 51.3 (39.9)35.7 (6.9-204.6) | 0.698 |
| Transferrin saturation, %- mean (SD)- median (range)  | 18.2 (13.2)17.5 (0.5-131.9) | 18.3 (7.6)17.8 (2.7-39.1) | 0.965 |
| Hepcidin, ng/mL- mean (SD)- median (range) | 5.2 (4.2)3.8 (2.0-23.5) | 4.9 (3.6)3.9 (1.4-19.3) | 0.586 |
| Iron status - normal [n, (%)]- ID [n, (%)] - IDA [n, (%)] | 42 (38.5)45 (41.3)22 (20.2) | 41 (42.3)25 (25.7)31 (32.0) | 0.037\* |
| Note: cm, centimeters; ID, iron deficiency; IDA, iron deficiency anemia; kg, kilograms Data is expressed as mean and standard deviation (SD) or no. (%), according to the nature of variables. Statistical methods used: chi-square, one-way analysis of variance, Mann-Whitney U or Student’s t-test, as appropriate. \**p* < 0.05 was considered statistically significant. |

**TABLE 3** Laboratory parameters of infants with and without thalassemia minor who had either normal iron status or iron deficiency anemia

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| --- | --- | --- | --- | --- |
| **Parameters** | **Infants without thalassemia minor** | ***p*-1£** | **Infants with thalassemia minor** | ***p-2*£** |
| **Normal iron status (n = 39)** | **With IDA** **(n = 22)** | **Normal iron status (n = 41)** | **With IDA****(n = 31)** |
| Hb, g/dL | 12.3 (0.7) | 10.1 (0.8) | < 0.001\* | 11.7 (0.7) | 10.3 (0.7) | < 0.001\* |
| Hct, % | 37.3 (2.3) | 32.3 (1.7) | < 0.001\* | 36.1 (2.0) | 32.5 (1.9) | < 0.001\* |
| RBC, x106/cu mm | 4.78 (0.36) | 4.82 (0.48) | 0.996 | 5.21 (0.39) |  5.25 (0.66) | 0.749 |
| MCV, fL | 78.1 (3.4) | 67.5 (7.1) | < 0.001\* | 69.6 (4.3) | 63.0 (7.1) | < 0.001\* |
| MCH, pg | 25.8 (1.4) | 21.2 (2.8) | < 0.001\* | 22.5 (1.7) |  19.8 (2.6) | < 0.001\* |
| MCHC, % | 33.0 (0.8) | 31.3 (1.1) | < 0.001\* | 32.6 (1.8) |   31.4 (1.4) | 0.003\* |
| RDW, % | 13.8 (0.9) | 16.4 (1.6) | < 0.001\* | 14.9 (1.8) | 17.2 (2.6) | < 0.001\* |
| Hb A, % | 93.6 (2.4) | 94.3(3.2) | 0.337 | 76.8 (18.4) | 68.5 (29.8) | 0.150 |
| Hb A2 , % | 2.7 (0.3) | 2.5 (0.4) | < 0.001\* | 3.0 (0.6) | 3.1 (0.7) | 0.517 |
| Hb F, % | 3.7 (2.5) | 2.9 (2.9) | 0.262 | 6.4 (5.4) | 7.1 (5.6) | 0.594 |

Note: Hb, hemoglobin; Hct, hematocrit; IDA, iron deficiency anemia; MCV, mean corpuscular volume; MCH, mean corpuscular hemoglobin; MCHC, mean corpuscular hemoglobin concentration; RBC, red blood cell count; RDW, red blood cell distribution width. Hb A, Hb A2, and Hb F data from infants with thalassemia minor include those with α-thalassemia trait, β-thalassemia trait, Hb E trait or homozygous Hb E.

Data is expressed as mean and standard deviation (SD) or no (%), according to the nature of variables. Statistical methods used: Mann-Whitney U or Student’s t-test, as appropriate. **£***p*-1 and *p*-2 compared laboratory parameters between three different iron status (normal iron status and IDA) among infants without and with thalassemia minor, respectively \**p* < 0.05 considered statistically significant.