Table 1: Anaemia and iron status according to haemoglobin genotype

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| **Haemoglobin genotype** | **Iron deplete 1** | **Raised serum transferrin receptor 2** | **Cellular iron deficiency 3** | **Anaemia 4** | **Iron deficiency anaemia 5** | **Low serum iron 6** | **Raised Zinc Protoporphyrin 7** |
| **Normal** | 418/1131 (37.0%) | 545/1154 (47.2%) | 286/1124 (25.4%) | 301/1195 (25.2%) | 138/1113 (12.4%) | 236/1137 (20.8%) | 149/619 (24.1%) |
| **α- thalassaemia sub-type** |  |  |  |  |  |  |  |
| * -α3.7 /αα | 89/440 (20.2%) | 136/449 (30.3%) | 43/440 (9.8%) | 71/455 (15.6%) | 18/438 (4.1%) | 55/444 (12.4%) | 25/258 (9.7%) |
| * -α3.7/ -α3.7 | 1/14 (7.1%) | 7/14 (50.0%) | 1/14 (7.1%) | 6/14 (42.9%) | 1/14 (7.1%) | 0/14 (0.0%) | 1/8 (12.5%) |
| * -α4.2 /αα | 10/52 (19.2%) | 15/52 (28.8%) | 6/52 (11.5%) | 12/55 (21.8%) | 4/52 (7.7%) | 5/50 (10.0%) | 2/30 (6.7%) |
| * -α4.2/ -α4.2 | 1/1 (100.0%) | 1/1 (100.0%) | 1/1 (100.0%) | 1/1 (100.0%) | 1/1 (100.0%) | 1/1 (100.0%) | 1/1 (100.0%) |
| * -α3.7/ -α4.2 | 1/6 (16.7%) | 3/6 (50.0%) | 1/6 (16.7%) | 2/6 (33.4%) | 0/6 (0.0%) | 1/6 (16.7%) | 1/4 (25.0%) |
| * - SL / αα | 0/2 (0.0%) | 1/2 (50.0%) | 0/2 (0.0%) | 2/2 (100.0%) | 0/2 (0.0%) | 0/2 (0.0%) | 0/1 (0.0%) |
| **All α-thalassaemia** | 102/515 (19.8%) | 163/524 (31.1%) | 52/515 (10.1%) | 94/533 (17.6%) | 24/513 (4.7%) | 62/517 (12.0%) | 30/302 (9.9%) |
| **β –globin variants** |  |  |  |  |  |  |  |
| * β –thalassaemia trait | 17/110 (15.5%) | 74/110 (67.3%) | 17/110 (15.5%) | 69/97 (71.1%) | 8/94 (8.5%) | 8/108 (7.4%) | 7/7 (100.0%) |
| * HbE trait | 4/22 (18.2%) | 3/22 (13.6%) | 2/22 (9.1%) | 6/24 (25.0%) | 1/22 (4.5%) | 3/27 (11.1%) | 0/2 (0.0%) |
| * HbS trait | 1/6 (16.7%) | 4/6 (66.7%) | 1/6 (16.7%) | 1/6 (16.7%) | 0/6 (0.0%) | 1/6 (16.7%) | - |
| * HbD Punjab trait | 1/2 (50.0%) | 1/2 (50.0%) | 1/2 (50.0%) | 0/2 (0.0%) | 0/2 (0.0%) | 0/3 (0.0%) | 0/1 (0.0%) |
| * HbC trait | 0/1 (0.0%) | 0/1 (0.0%) | 0/1 (0.0%) | - | - | 0/1 (0.0%) | 0/1 (0.0%) |
| **More than one haemoglobinopathy trait** | |  |  |  |  |  |  |
| * β –thalassaemia trait and α- thalassaemia | 5/14 (35.7%) | 6/14 (42.9%) | 5/14 (35.7%) | 9/16 (56.3%) | 0/14 (0.0%) | 0/14 (0.0%) | 0/2 (0.0%) |
| * HbE trait * and α- thalassaemia | 0/3 (0.0%) | 1/3 (33.3%) | 0/3 (0.0%) | 0/3 (0.0%) | 0/3 (0.0%) | 0/3 (0.0%) | -  - |
| * HbD Punjab trait * and α- thalassaemia | 2/2 (100.0%) | 1/2 (50.0%) | 1/2 (50.0%) | 0/2 (0.0%) | 0/2 (0.0%) | 0/2 (0.0%) | - |
| **Total** | **550/1806 (30.5%)** | **817/1838 (44.5%)** | **365/1799 (20.3%)** | **509/1878 (27.1%)** | **171/1769 (9.7%)** | **310/1818 (17.1%)** | **186/934 (19.9%)** |

Footnotes

1. Serum ferritin <15ng/ml.
2. Serum Transferrin receptor >28.1 nmol/l.
3. Serum ferritin <15ng/ml and transferrin receptor >28.1 nmol/l.
4. Hb <11.5.0 g/dl in children < 12 years, Hb <12.0 g/dl in females ≥12 years and males aged 12-14 years and Hb <13.0 g/dl in males aged ≥15 years.
5. Serum ferritin <15ng/ml and transferrin receptor >28.1 nmol/l and Hb <11.5.0 g/dl in children < 12 years, Hb <12.0 g/dl in females ≥12 years and males aged 12-14 years and Hb <13.0 g/dl in males aged ≥15 years.
6. Serum iron <10.6 μmol/l in males and <6.6 μmol/l in females.
7. Zinc Protoporphyrin > 70μmol/mole heme.