TWO CASES OF FAMILIAL DYSERYTHROPOIETIC ANEMIA

V. Kaleva, G. Semova, E. Peteva, M. Belcheva, H. Hristozova, I. Racheva, E. Valcheva
Pediatric clinic of Oncohematology, University Hospital St Marina, Varna, Bulgaria

The congenital dyserythropoietic anemias (CDAs) comprise a group of rare hereditary disorders of erythropoiesis, characterized by ineffective erythropoiesis as the predominant mechanism of anemia.The presence of distinctive morphologic abnormalities in erythroblasts defined each of the three originally described forms CDA (I to III types).

The diagnosis of CDAs requires the presence of all of four criteria:

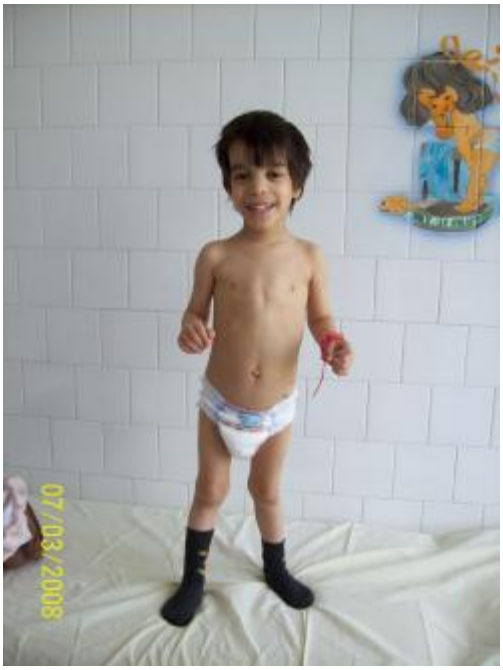
1. Evidence of congenital anemia/jaundice or of heredity
2. Evidence of ineffective erythropoiesis
3. Typical morphological appearance of bone marrow erythroblasts
4. Exclusion of congenital anemias which fulfill criteria one and two, but have been classified according to the underlying defect, such as the thalassemia syndromes, some types of pathological haemoglobins, or hereditary sideroblastic anemias.

CDA II, also known as hereditary erythroblastic multinucleary with a positive acidified-serum test (HEMPAS), is the most frequently encountered disorder of the CDA group. The leading morphologic abnormality is binuclearity occurring in 10% to 50% of mature erythroblasts, with equal DNA content in both nuclei.

We report two siblings with Congenital Dyserythropoietic Anemia type II . The diagnosis is set on base on official accept criterias.

CLINICAL DATA

	Patient I	**Patient II**
Age at diagnosis	6 y	3 y
sex	male	male
Previous medical history: Neonatal period: Infancy and early childhood:	 Anemia and hyperbilirubinemia Persistent anemia and jaundice, no trasfusion requirement	 Severe anemia and hyperbilirubinemia; exchange transfusion at first days after birth Persistent anemia and jaundice, no trasfusion requirement
Phisical findings : Anthropometric measurement: Dysmorphic signs Pallor/jaundice	 normal no yes	 normal yes (Fig. 1 and Fig. 2) yes
Mental status	normal	mild metal retardation
Hepatomegaly	mild	mild
Splenomegaly	moderate	mild



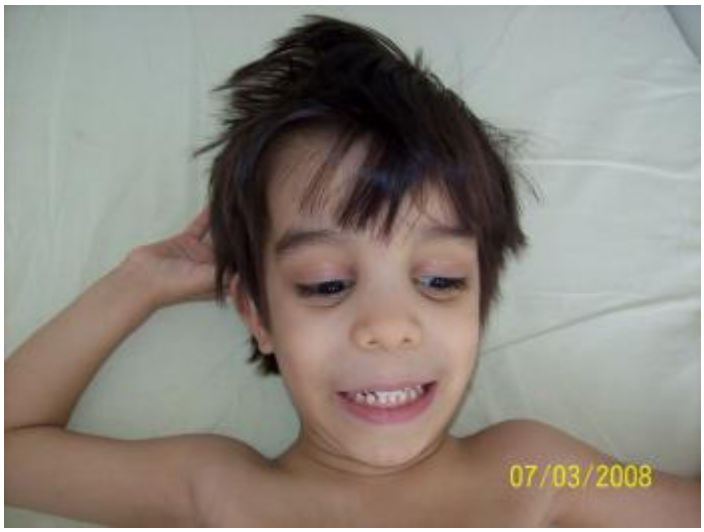


Fig.1 Disproportional habitus: relative megacephaly, normal upper segment of the body, shorten lower extremities
Fig.2 Dysmorphic facial features: wide nose, antevertic nares, epicantus billateralis

LABORATORY DATA

	Patient I	**Patient II**
Hemoglobin concentration, g/l	107	106
Mean cellular volume, fl	92,5	91,1
Mean cellular hemoglobin, pg	33,3	32,4
Reticulocyte count,%	12	16
Serum concentration of iron, mcmol/l	21,5	16,8
Total billirubin, mcmol/l	99	90
Direct billirubin, mcmol/l	11	8

The diagnosis CDA II based on typical bone marrow findings. The leading morphological abnormality is binuclearity in more than 1/3 of erythroblasts in all degree of maturity; hyperplasia of erythroid line (Fig.3-6)

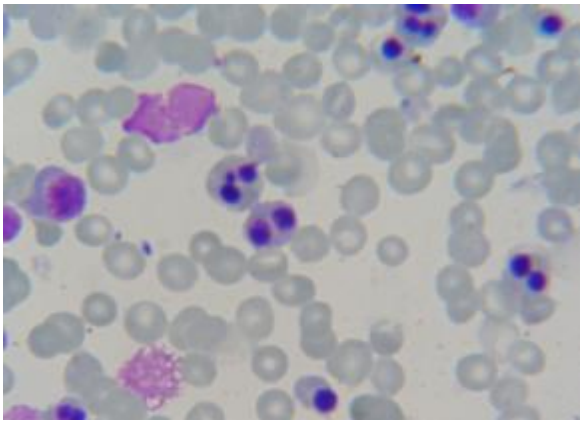


Fig. 3

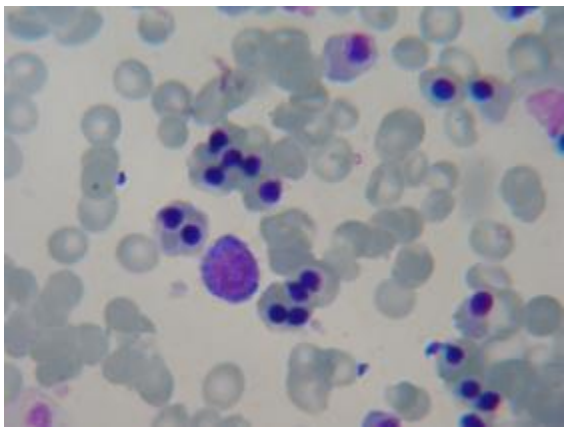


Fig. 4

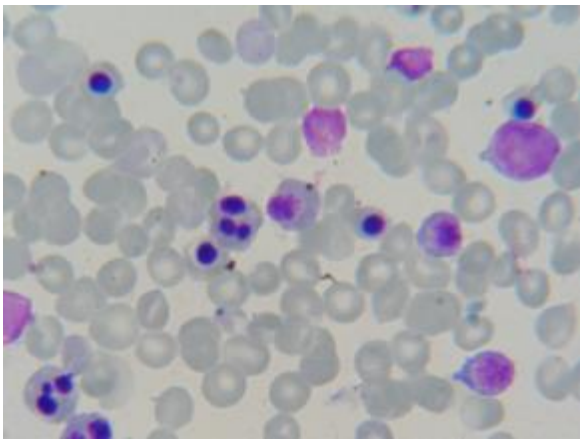


Fig. 5

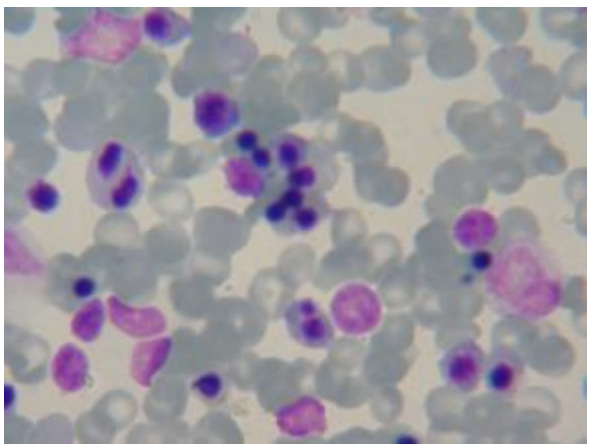


Fig. 6

Conclusions:

The CDA II is uncommon, familial cases are extremely rare.

Our observation confirm the conclusion of other authors that the diagnosis is often delayed and first recognized in late childhood or in adults, although anemia and/or hyperbilirubinemia had been known for many years.

Even our patients have light, transfusion independent anemic syndrome they can reveal iron overload, ferritin levels should be controlled in at least yearly intervals.

References:

1. Heimpel H et al. Congenital dyserythropoietic anemia type II: epidemiology, clinical appearance, and prognosis based on long term observation. *Blood* 2003;102 (13): 4576-4581

2. Wickramasinghe SN. Congenital dyserythropoietic anemias. *Current Opinion in Hematology* 2000; 7: 71-78

3. Heimpel H. Congenital dyserythropoietic anemias: epidimiology, clinical significance,and progress in understanding their pathogenesis. *Ann of Hematol* 2004; 83(10): 613-21

4. Bader-Meuner B et al. Clinical and Laboratory Manifestation of Congenital Dyserythropoietic Anemia Type I in a Cohort of French Children. *Pediatr Hematol Oncol* 2005; 27: 416-419