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LETTER TO THE EDITORS

Transcobalamin (TC) deficiency and newborn screening

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Dear Editor,

We would like to update the readership about transcobalamin (TC) deficiency and newborn screening. In a recent article we described two siblings with TC deficiency (Prasad et al. 2008). The older child was clinically symptomatic with pancytopenia and his sister was diagnosed at birth by mutation analysis. Both children were homozygous for a R399X (c.1195C>T) mutation. Both children are now doing well on oral Vitamin B_{12} (Cyanocobalamin 10 mg and 5 mg once daily respectively). Propionylcarnitine concentrations were not elevated in the newborn screening cards from the proband and sister, however as indicated in Prasad et al. 2008, the analyses were performed on specimens retrieved from storage after 7 years and 5 years, respectively. The mother has delivered another son who is clinically asymptomatic at age 5 months but had a positive newborn screen for propionic/methylmalonic acidemia with an elevated C3 at 6.59 μM (0.68-3.9) and C3/C2=0.33. The Ontario provincial newborn screening program considers a result positive for a baby <7 days old if C3/C2 >0.27 and C3 >4.0 μM or the C3/C2>0.23 and C3 >5.5 μM. Hematological parameters showed low hemoglobin at 145 (150–200 g/L) and neutrophils at 4.1 (6–26)×10*9/L. Platelets were normal at 425 (150–400)×10*9/L and homocysteine was 18.1 (5–12/L) mildly elevated. Oral Vitamin B_{12} 1 mg daily (Cyanocobalamin) was initiated based on the positive newborn screening results and the diagnosis of TC deficiency was confirmed by mutation analysis. In a paper by Ratschmann et al. 2009, TC deficiency was diagnosed in one of the siblings at birth by measuring TC protein in the umbilical cord however it was not mentioned if newborn screening was done on that affected baby.

Our experience indicates that infants with TC deficiency may be identified by C3 elevation on tandem mass spectrometry newborn screening and that TC deficiency should be kept in differential diagnosis when elevated C3 is encountered.

References

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