

C845129 : MAJOR PEDIATRICS

KEY WORD: H₂O₂ HEMOLYSIS/ VITAMIN E/ TOTAL LIPIDS RATIO / CHRONIC LIVER DISEASE / CHILDREN.

THIWAN SRIRUNGROJANA: CORRELATION OF HYDROGEN PEROXIDE HEMOLYSIS AND VITAMIN E/ TOTAL LIPIDS RATIO IN CHILDREN WITH CHRONIC LIVER DISEASE. THESIS ADVISER: PROF.YONG POOWORAWAN, MD. 27 PP , ISBN 974-636-582-7

Objective To analyse the correlation between H₂O₂ Hemolysis Test and Vitamin E/total lipids ratio and find prevalence of vitamin E deficiency in children with chronic liver disease

Design Cross-sectional descriptive study

Setting Department of Pediatrics, Chulalongkorn Hospital

Patients 32 Children with chronic liver disease (age 2 months - 11 years11 months) were examined and taken blood sample.

Methods Examination of H₂O₂ Hemolysis Test (by Modified Horwitt et al. technique), serum vitamin E (by HPLC) and total lipids (by colorimetric method) were done and analysed the correlation between H₂O₂ Hemolysis and Vitamin E / total lipids ratio. Prevalence of vitamin E deficiency was calculated (criteria was vitamin E/total lipids ratio < 0.6 mg/gm)

Results Partial correlation between H₂O₂ Hemolysis Test and vitamin E/ total lipids ratio (r=-.3220, p = 0.072) is observed. There are significant correlation (r=-.7107, p =0.009) in infants (age < 1 yr.), but no significance in children (age ≥ 1 yr.) (r=-.2109, p = 0.372). Prevalence of vitamin E deficiency is 84.4% and no difference between oral vitamin E-treated group and non vitamin E-treated group (n = 13) (p=0.065), eventhough we analysed in different severity of disease. All of the patients that have total bilirubin ≥ 10 mg/dl, have vitamin E deficiency.

Conclusions H₂O₂ Hemolysis Test can be used as a measurement for evaluation of vitamin E status in infants (age < 1 years) with chronic liver disease, but in group of children (age ≥ 1 year) need further study. Surveillance and proper management of vitamin E deficiency should be done to prevent neurologic complication. Intramuscular and water-soluble form of vitamin E should be considered to be used in cholestatic children in Thailand.

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