

## Assessment of Dietary Folate Consumption and Serum Folate Level Among $\beta$ -thalassaemia Traits

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There is no consensus among clinicians regarding the necessity of regular folic acid replacement for individuals with heterozygous  $\beta$ -thalassaemia (BTT). The increased ineffective erythropoiesis, albeit to a mild degree, could make them vulnerable to folate deficiency, especially if there is an associated dietary deficiency. Community-based studies in Sri Lanka have previously shown a high prevalence of folate deficiency in the community, reaching even 43%; very likely suggestive of dietary deficiency. This study was designed to assess dietary folate consumption and serum folate levels in those with BTT viz a viz healthy matched controls. This case-control study includes 100 sets of samples, including a  $\beta$ -thalassaemia trait and an age, sex and BMI-matched normal individual from the same household in each set, aged between 5 to 25 years. Serum folate levels were determined using a fully automated Cobas immunoassay analyzer. The dietary intake of each participant was determined by recording 24-hour dietary recall on three consecutive days. Based on the results, 33 out of 98 (34%) cases had serum folate deficiency with a mean of 4.88 ng/mL, while 24 out of 99 (24%) controls had serum folate deficiency (defined as <3 ng/mL) with a mean of 4.76 ng/mL. Additionally, 37% (36/98) of cases and 49% (48/99) of controls were at risk of deficiency (defined as 3-5.9 ng/mL). Statistical analysis did not reveal any significant differences ( $p>0.05$ ) in serum folate levels between cases and controls. Dietary folate intake was low but not significantly different between those with BTT (mean 181  $\mu$ g; 96% <RDA) and controls (mean; 182  $\mu$ g; 97%<RDA). There was no significant correlation between serum folate or dietary folate levels among cases ( $r= 0.097$ ) or controls ( $r=0.098$ ). In conclusion, there were high levels of folate deficiency in both controls and those with BTT (>24% and 34%), but those with BTT were no more likely to be folate deficient than the controls.

**Keywords:**  $\beta$ -thalassaemia trait, Serum folate, Dietary folate, Folate deficiency

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