

Depression symptoms in children with early and continuously treated Phenylketonuria



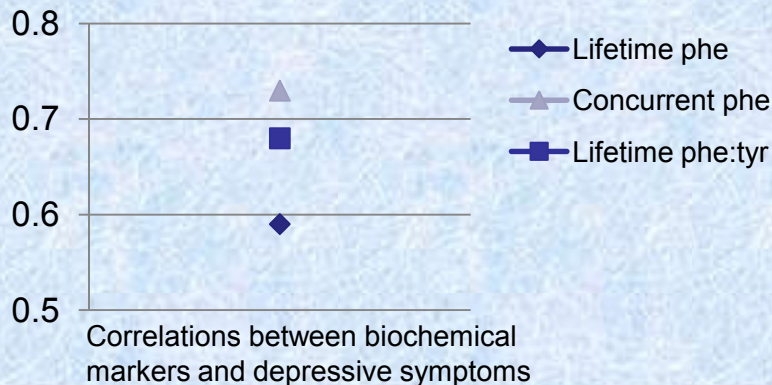
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Previous evidence suggests people with PKU may experience higher levels of mood disturbance than controls. We examined self-reported symptoms of depression in children with PKU and sibling controls to determine if depressive symptoms were higher in this group; and whether concurrent or historical phenylalanine (phe) and/or tyrosine (tyr) levels were associated with depressive symptoms.

METHOD: 11 children with PKU aged between 10 to 17yrs & 6 close-aged siblings participated in this project. The child with PKU and their sibling filled out the Children's Depression Inventory (CDI) on the same day as the child with PKU provided a blood sample for phe and tyr analysis. The CDI consists of subscales measuring flat affect (low mood), interpersonal problems, negative mood, low self esteem and ineffectiveness.



RESULTS

(i) No child reported enough symptoms of depression in total to be considered clinically depressed. However only children with PKU reported clinically significant levels of depression (T-Score >65) on any of the subscales measured.

(ii) Depression & phe/phe:tyr ratio
Strong, positive and statistically significant correlations were observed between historical measures of both high phe and high phe:tyr ratio and increasing numbers of depressive symptoms.

(iii) The strongest correlation was observed between measures of concurrent phe and total number of depressive symptoms ($r = .73$). Increases in concurrent phe are hypothesised to temporarily disrupt neurotransmitter function, contributing to mood disturbances in this population.

CONCLUSIONS

No statistically significant difference between children with PKU and their siblings were found in terms of depression; however, depression is rare in this age range, and failure to achieve significance may have been affected by our small sample size.

Only children with PKU reported clinically significant levels of depression subcomponents compared to zero controls. This result is of clinical importance and should be followed up with a larger sample, using a more comprehensive assessment of depression.

The relationship between depressive symptoms and biochemical markers suggests that:

- poor long-term dietary compliance, indicated by high phe and high phe:tyr across the lifetime, was correlated with greater self report of depressive symptoms;
- the strongest correlations are between concurrent phe and depressive symptoms;
- relatively short-term increases in phe may increase depressive symptoms in children with PKU.

