Phenylketonuria

Newborn screening for phenylketonuria and early introduction of dietary therapy has been remarkably successful in preventing the severe neurological features of phenylketonuria, including mental retardation and epilepsy. However, concerns remain that long-term outcome is still suboptimal, particularly in adult patients who are no longer on strict phenylalanine-restricted diets. With our systematic literature review we aimed to describe the neurological phenotype of adults with early-treated phenylketonuria (ETPKU). The literature search covered the period from 1 January 1990 up to 16 April 2018, using the NLM MEDLINE controlled vocabulary. Of the 643 records initially identified, 83 were included in the analysis. The most commonly reported neurological signs were tremor and hyperreflexia. The overall quality of life (QoL) of ETPKU adults was good or comparable to control populations, and there was no evidence for a significant incidence of psychiatric disease or social difficulties. Neuroimaging revealed that brain abnormalities are present in ETPKU adults, but their clinical significance remains unclear. Generally, IQ appears normal but specific deficits in neuropsychological and social functioning were reported in early-treated adults compared with healthy individuals. However, accurately defining the prevalence of these deficits is complicated by the lack of standardised neuropsychological tests. Future research should employ standardised neurological, neuropsychological and neuroimaging protocols, and consider other techniques such as advanced imaging analyses and the recently validated phenylketonuria-specific QoL questionnaire, to precisely define the nature of the impairments within the adult ETPKU population and how these relate to metabolic control throughout life [1)].

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Burlina AP, Lachmann RH, Manara R, Cazzorla C, Celato A, van Spronsen FJ, Burlina A. The neurological and psychological phenotype of adult patients with early-treated phenylketonuria: a systematic review. J Inherit Metab Dis. 2019 Jan 28. doi: 10.1002/jimd.12065. [Epub ahead of print] Review. PubMed PMID: 30690773.