Understanding vitamin D trends in children with non-alcoholic fatty liver disease

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New research charts vitamin D levels and variations in genes that determine vitamin D status in UK children diagnosed with non-alcoholic fatty liver disease.

A team of scientists has examined the vitamin D levels in children with non-alcoholic fatty liver disease over a 12 month period. The study found the majority of children in the cohort had insufficient vitamin D levels throughout the year, with severe vitamin D deficiency during the winter months.

It is also the first study to find a relationship between genetic variations in the vitamin D metabolic pathway and the severity of liver damage in UK children. The researchers found that polymorphisms in the vitamin D related genetic variants NADSYN1/DHCR7 and VDR were independently associated with increased liver fat while a GC variant was associated with increased inflammation in liver biopsies.

Non-alcoholic fatty liver disease is now the most common chronic liver disease in children. Both genetic and nutritional factors are thought to influence the progression and development of the disease. Previous studies have raised the question of whether improving vitamin D status through diet or supplements may benefit patients.

Study co-author Dr. Bernadette Moore, from the School of Food Science and Nutrition at the University of Leeds said: "Despite the high prevalence of non-alcoholic fatty liver disease, thus far lifestyle change is the only proven effective treatment for those diagnosed. However the lack of understanding regarding the disease's molecular pathogenesis makes it very difficult to identify patients who are most likely to suffer disease progression and therefore to benefit from intervention.

"Our research hopes to add to the growing body of work that would make it easier to identify those at risk of progression, allowing for more targeted individualized therapy."

More information: Vitamin D status and associated genetic polymorphisms in a cohort of UK children with non-alcoholic fatty liver

disease, *Pediatric Obesity*, DOI: 10.1111/ijpo.12293