Dietary antibodies and gluten related seromarkers in children and young adults with cerebral palsy

av

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Akademisk avhandling

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Abstract


Background & Aims: Cerebral palsy (CP), the most common physical disorder in children that affect motor function, is associated with a low weight and height. Celiac disease (CD), an autoimmune disorder precipitated by ingestion of gluten, is another common chronic disease in children that has a negative impact on growth. Based on our findings in a small pilot study, antibodies against gluten, dietary antigens and antibodies against transglutaminase 6 (TG6) a new possible gluten related neurological marker have been investigated in an extended group of children with CP. The main aim of this thesis was to find out if the children with elevated gluten related antibodies have enteropathy consistent with CD and if they have antibodies to other dietary antigens as well. We further wanted to study if elevated levels of antibodies were associated to their weight, subtypes of CP and also to investigate if there were an association between the brain damage seen in CP and antibodies against TG6.

Methods: Ninety nine children with CP and matched (study 4) controls (study 3) were analysed for antibodies against gluten, TG6, egg white, lacto-globulin, casein and wheat. Small bowel biopsies were analysed in the majority of the children with antibody positivity, both by routine procedures and by extended analyse (study 2).

Results: Significantly elevated levels of gluten related seromarkers and antibodies against casein, lacto globulin and egg white were found in the CP-group compared to matched controls. The overall elevated levels of antibodies were more frequent in the tetraplegic (TP) and dyskinetic (DK) CP-subtypes having the most severe neurologic handicap and undernourishment. Routine and extended small bowel biopsies analysis did not indicate an increased prevalence of CD. Elevated antibodies against TG6 were found in the CP-group and significantly in the tetraplegic CP-subgroup.

Conclusion: Children with CP do not have increased prevalence of celiac disease but have elevated levels of gluten related seromarkers as well as antibodies against other dietary proteins compared to matched controls. There was a correlation between underweight, CP-subtypes (TP/DK) and occurrence of the tested antibodies suggesting disturbed intestinal permeability related to underweight. Compared to controls TG6 autoantibodies were found in the TP-subtype of CP that could be a result due to the brain damage.

Keywords: Cerebral palsy, children, celiac disease, glutensensitivity, brain, transglutaminase 2 and 6, malnutrition, casein, eggwhite, laktoglobulin.

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