

Gastrointestinal comorbidity, autistic regression and Measles-containing vaccines: positive re-challenge and biological gradient

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Abstract

Background: A temporal association between exposure to measles-containing vaccine (MCV) and autistic-like developmental regression in a subset of children with enterocolitis has been reported. Measles virus (MV) was detected in ileal biopsies from these children at higher prevalence than in developmentally normal pediatric controls.

This study tested the hypothesis of a dose-response effect of MCV exposure on intestinal pathology, as evidence of a causal association.

Methodology/Principle Findings: Children with normal early development and autistic-like developmental regression were divided into two groups: re-exposed children (n=23), who had received more than one dose of a measles-containing vaccine (MCV), and once-exposed children (n=23), who had received only one dose of MCV. The groups were matched for sex, age, and time-elapsing from first exposure to endoscopy. Comparisons included: secondary (2^o) gastrointestinal (GI) and related physical symptoms and observer-blinded scores of endoscopic and histological disease. Re-exposed children scored significantly higher than once-exposed for 2^o physical symptoms including incontinence, presence of severe ileal lymphoid hyperplasia, number of biopsies with epithelial damage and number of children with acute inflammation. Markers of acute inflammation included number of children affected and proportion of biopsies affected

Conclusion/Significance: The data identify a re-challenge effect on symptoms and a biological gradient effect on intestinal pathology, which links MCV exposure to autistic-like developmental regression and enterocolitis.

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Keywords: gastrointestinal comorbidity, measles vaccine, enterocolitis, ileal lymphoid hyperplasia, autism spectrum disorder
