Research Does Not Support the Link between the MMR Vaccine and Autism

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Abstract

This review article looks closely at whether or not available research shows a connection between the MMR vaccine and Autism Spectrum Disorder (ASD). The author looked at over 60 research articles and narrowed it down to 25 and from that 25 chose several articles that offered adequate research regarding the link between the MMR vaccine and ASD. This research provides a glimpse into the need for a better understanding of parental perceptions in choices to not have children vaccinated and the need to educate parents on concerns about immunization side effects, safety and possible effects to the immune system so that parents can make informed decisions in regards to vaccinations. Suggestions are offered for future research in regards to the causes of ASD.
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Doja and Roberts (2006) define Autism Spectrum Disorder (ASD) as a “neurodevelopmental disorder involving deficits in behavior and cognition with onset in the early childhood years.” It was in 1943 one psychiatrist; Leo Kramer diagnosed ASD as a behavioral disorder among children and another researcher Hans Asperger was also writing about children with symptoms similar to those described by Kramer but without the speech deficit (Cave, 2008). Today children appearing to be higher functioning but with some symptoms of ASD will be said to have Aspergers Syndrome.

ASD is found to be more prevalent in males than in females at a ratio of 4:1, most often occurring among children between the ages of 12 to 24 months, with 30% showing a regression in developmental skills (Blaylock, 2008; Doja, 2006). Concern among parents has increased as the number of children diagnosed with ASD has increased and many parents are choosing to not have their children vaccinated. Even though research does not show a link between the two, parents are more afraid of what may happen rather than the diseases for which the vaccine is meant to protect. This article will show research does not support the link between the MMR vaccine and Autism disorder.

Method

To begin with it is important to look at the available research involving the MMR vaccine as it relates to Autism Spectrum Disorder (ASD). A search of Pubmed and the Nursing Resource Center using the terms “Autism” OR “Autism and MMR Vaccine” OR “Autism and Vaccines” OR “Autism AND Mercury” that included parameters of the past 10 years was conducted. During an initial scan thirteen of the articles were eliminated due to later research proving that the research was flawed and therefore invalid. Only articles that identified Autism, MMR
vaccine, genetics, and all other vaccines were considered during the initial scan. After scanning the relevant articles, articles not directly related to research about the MMR vaccine and ASD were eliminated. During the final scan articles were narrowed down to 25 that were focused on the MMR vaccine, its components, parental attitudes about the MMR vaccine, and its possible link to ASD.

**Results**

Interesting enough it was difficult to find documentation which supported a link between the MMR vaccination and ASD without later finding the data was proven to be flawed. In 1998 researchers Wakefield, Walker-Smith, and Murch presented research titled the Lancet Study in which they identify and offer proof of a link between the MMR vaccine and ASD. However this research was later found to be flawed, in subsequent research, and therefore could not be included as a reliable resource to support the link between MMR and ASD (Katz, 2006; Lett, 2007).

There were however, several studies that showed a definitive lack of proof relating MMR and ASD. These studies looked at children diagnosed with autism before the introduction of the MMR vaccine, during the administration of the MMR vaccine, and number of children diagnosed with ASD after the MMR vaccine was discontinued (DeStefano, 2007; Honda, 2005; Schechter, 2008). These studies were completed in the United States, Ukraine, London and Japan. The studies included research involving children who were afflicted with ASD prior to vaccines, during the vaccine period, and after the vaccine were discontinued. The reports showed no increase in reported cases of ASD during the vaccination period and in one case showed an increase in ASD cases once the vaccine was discontinued.
Next there were several researchers who looked at the possible link between Thimerosal-Containing vaccines and ASD (Cave, 2008; Doja, 2006; Tozzi, 2009). “Thimerosal, a mercury compound used as a preservative in vaccines administered during infancy, has been suspected to affect neuropsychological development” (Tozzi, 2009). Since Autism is classified as a neurodevelopmental disorder many believed the Thimerosal found in vaccines would provide a link between the MMR vaccine and ASD. However, studies have not found a definitive link between the two (Cave, 2008; Tozzi, 2009). ASD is still on the rise even though there is a decrease in use of Thimerosal in vaccines.

Several studies looked at the decline in children receiving the MMR vaccine, the causes of the decline, attitudes of parents in relation to the MMR and the fears of parents related to the MMR vaccine being linked to ASD (Luthy, 2010; Moran, 2009; Smith, 2007; Wallace, 2005). The authors show parents concerns related to the belief that the MMR causes ASD, and parents not understanding the need for the vaccination. Parents feared the probable side effects of the vaccine more than they feared the illness (Smith, 2007).

**Discussion**

At this time research does not show a link between the MMR vaccine and ASD. Even though mercury is known to cause developmental problems in children, researchers have been unable to link Thimerosal, found in the MMR vaccine, to ASD. Yet parents continue voice concern about the MMR vaccine being linked to ASD and are reluctant to have children vaccinated. Therein lays the problem parents are not vaccinating their children and in the process there is a greater chance of an epidemic outbreak of measles, mumps, and rubella.

There are some limitations to the above studies in that researchers were not able to accurately determine dates and times of the MMR vaccinations administered to children in the
study and had to rely on parental reports. The possibility of children being more predisposed to developing ASD due to siblings with the illness was not considered.

**Conclusion**

To conclude the findings show there is not a definite link between the MMR vaccine and ASD. Parents are choosing to withhold the MMR vaccine out of fear based on false reports or research that inaccurately identified a possible link between the MMR and ASD. It is interesting but not all surprising, parents today may never have seen a child with measles, mumps, or rubella but they have seen an autistic child. Therefore they fear what they do know, children develop ASD at around the same time they are or have received the MMR vaccine, though not because of the vaccine but because they are at the age that children start showing signs of ASD. Perhaps, like Attention Deficit Hyperactivity Disorder (ADHD), there is an increase of diagnosed cases because there is more awareness of the illness and therefore an increased number of cases being reported.

It is important for physicians and nurses to educate and address parental concerns about immunization side effects, safety and possible effects to the immune system so that parents can make informed decisions in regards to vaccinations. It is also important for parents to be willing to learn accurate information about vaccines and the illnesses vaccines are meant to protect children from.

Further research should focus on evaluating parents perceptions about immunizations, educating parents about immunizations, and looking at a possible connection between predisposing factors (genetics) and ASD (Wu, 2009).
References


