Vaccines and Autism

Introduction

Autism is a lifelong and serious developmental disorder which is marked by characteristics of impaired communication skills, social interactions, stereotyped activities, and interests, restrictive or repetitive behaviors in the individuals exhibiting this disorder. There is worldwide increase in autism rate diagnoses that has led to general awareness to the public by fueling concerns that the vaccines in the environmental exposure might be causing autism. Theories for this association have been pointing at the measles-mumps-rubella (MMR) and thimerosal vaccine, with an array of other vaccines administered. Many parents have the fear that childhood vaccines are causing numerous negative effects that range from attention deficit disorder, immune dysfunctions, and autism. Several trends have contributed to this anxiety with increasing cases of autism being reported in the media coverage, faded memories of past vaccine-preventable diseases failure and misinformation on the internet.

Background

The relationship between vaccines administered during childhood and autism have been a dominant issue of controversy that has brought over debate over child immunization. The debate is centered on the historical analysis surrounding whether mercury in vaccines has a prevalent link to autism. The mercury contains a preservative thimerosal that has led to evaluation questions about its safety or compounds of toxic effects that are introduced during immunization of infants. A notion was developed that children were receiving many vaccines at an early age and probably the vaccines could be overwhelming the immature immune system in children or either generating a pathologic autism that was induced. Analysis have been conducted as to why mercury was first integrated into thimerosal and vaccines administered in childhood. Physicians in the past era used thimerosal which was promising at the organomer-curials used in test labs which reinforced impressions that thimerosal to be more benign than previous mercurials.
Vaccines and Autism

Vaccines were continually becoming an important niche, but the troublesome safety issues that afflicted the early 20th century detailed the bacterial contamination in child immunization, where vaccines with multidose vials were drawn under poor hygienic conditions by practitioners. This produced severe reactions, abscesses and deaths contributing to the challenge of thimerosal’s efficacy. Questions against thimerosal’s safety were raised which provoked rise in awareness or the risks associated with organic mercury poisoning. A series of cases and reports were used to demonstrate the compound’s potential risk for neurotoxicity when administered in large volumes and the methyl mercury that was linked to brain development in infants.

Vaccines and Autism Controversy

A hypothesis was developed that vaccines which contained thimerosal could explain the rapid rise and prevalence of autism. Although, use of vaccines is among the greatest achievements in biomedical science and cornerstone in public health, use of MMR is still a major concern in link to autism. Psychologists like Bernard Rimland rejected a psychogenic model of infantile autism and proposed instead that the condition was rooted in biology which further led to other different explanatory frameworks of autism. However, autism has been linked to have a strong genetic component that is probably the cause of associated neurological defects observed in early embryonic development. Although, diagnosis of autism is made later in life, underlying cases of neuropathology traces of autism at birth, as children grow normally then regress to develop autistic characteristics.

Pediatricians and children’s parents adopted the belief that the MMR vaccine was contributing to the behavioral problems characteristic of autism spectrum disorders. The exhibited characteristics of impaired communication and social interaction have raised fears and more questions regarding the link between vaccines and autism. With increased number of cases on the rise either due to increased awareness or differences in methods of assessing the prevalent situation, the MMR vaccine containing thimerosal is under questions of its safety and monitoring systems under its administration (Baird, 2008).
Current issues in administration of modern vaccines, have led to development of improved vaccines that are used in routine vaccinations among individuals in protection against rubella, measles, chickenpox, pertussis diphtheria, tetanus and mumps among a few. The Advisory Committee on Immunization offers CDC recommendations for vaccinations administered for the different ailments, which combine efforts with the American Academy of Pediatrics on the routine vaccinations in children against fourteen diseases common in children during their preschool years and infancy. These vaccines are administered early during childhood development to ensure protection against early childhood diseases. The advisory committee recommends the schedule and essential timing in administration of vaccines to children to assure protection is possible and precedes the exposure of the disease.

Delayed vaccines have risks as children from birth are literally exposed environmental organisms that cause infections, thereby extending time in which infants are susceptible to the real diseases and simultaneously causing more serious implications specifically to the youngest children. The aim of the immune system generally is to remove foreign bodies. Infants’ immune systems have the capability to respond to a vaccine antigen and develop effective antibodies that can better respond to routine exposures with a strong internal body defense against a host of infectious diseases which in the past had a tremendous toll.

The National Institute of Health and CDC in the United States, convened experts to address the controversial issue of the MMR vaccine and autism characteristics. After in-depth review and of relevant medical and scientific literature, the panel of experts rejected the casual link between autism disorders and the MMR vaccine through lack of epidemiologic evidence, lack of biologic models, and causality between autism and bowel disorders. Indirect evidence between autism and the MMR vaccine and lack of association was provided by ecological studies that compared correspondingrends in MMR vaccination with prevalence trends in autism in California. However, concerns were quickly pointed out with the possibility that thimerosal exposure in the vaccines was causing autism with subtle effects being found in verbal abilities, dexterity, attention, speech and visuospatial abilities.
Moreover, these findings were inconsistent with no association found with autism. With preponderance growth of evidence that shows no relations between autism and MMR, has led to increased use rates in different countries like England. Moreover, with use of the vaccine, recent events have compounded public concerns about vaccines and autism with numerous claims being presented to the Compensation Program of the National Vaccine Injury in the United States Court of Federal Claims. Vaccine manufacturers have worked to assure the public in the removal of thimerosal from vaccines. Consequently vaccines routine for children under six years, have undergone vaccination programs without thimerosal in the vaccines in the United States. More vaccines have been made available without thimerosal with example of several influenza vaccines as more studies being undertaken in the field to assess the risks that are associated with vaccines having thimerosal and its effects on infants’ immune systems.

Evidence defending the use of vaccines has been developed that show vaccines do not overwhelm children’s immune systems. Studies in the nursing practice have implications that more than often nurses should be in a position to provide advice to families regarding vaccines that are developed and used in formal practice. The parents need to be given credible and current evidence on vaccines that can be used by their children as they grow up and also in their daily lives so they can make excellent decisions based on the vaccine information.

Conclusion

Vaccination is important to infants and children during their preschool years and as they grow. Routines in vaccination help the children immune system to develop a strong body defense against many of the environmental prone diseases that may attack them. Delayed vaccinations can pose to be risky and dangerous as children are left to the precedent of the actual disease attacks either in measles or mumps to name a few. Moreover, concerns and awareness by parents and pediatricians raise questions about the prevalence increase in autism rates through vaccines. Thimerosal used as a preservative of mercury in the vaccines is proposed to be causing autism disorders and behaviors in children. However, with concerns about the possible link between autism and the MMR vaccine, studies and theories have been conducted to evaluate the possible association, but the current scientific findings do not support the cause of autism being the MMR vaccine.
Reference: