



AMERICAN JOURNAL OF PHARMTECH RESEARCH

Journal home page: <http://www.ajptr.com/>

A Comprehensive Review on Controversies In Immunisation Vaccination

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ABSTRACT

Childhood vaccination is our primary method to promote public health. Concerns and controversies about vaccination and vaccine safety had led some parents to decline recommended vaccination of their children⁴. This study systematically reviewed the literatures on controversies in childhood immunization². The objective of our study is to assess the controversies and risk benefit ratio of vaccination from the available data⁴. Data resources were collected from existing articles, electronic citations and existing reviews. Supportive to some personal beliefs of parents and their trust to other systems of medicine like homoeopathy there are reports of ill effects of vaccines (poliomyelitis by oral polio vaccine, encephalitis by measles vaccine). Some other disorders had also been reported with or without evidence. But most of the studies concludes that the benefits of immunization far outweighs risk. The risk of many diseases and mortality rate had decreased in present era due to vaccination. A dramatic example of the benefits generated by vaccination is evident in the context of diphtheria. During the 1930s an average of 61,000 cases of the disease were experienced each year in England and Wales, resulting in the deaths of approximately 3,000 individuals³. Studies shows that after taking immunisation, during the first three years and nine months of the 1980s there were 15 notified cases of diphtheria and only one death. Poliomyelitis routine immunisation for infants has been pursued in England and in the 1980s only 10 cases of acute poliomyelitis have been notified to the authorities from an average of 2827 notified cases in 1956. Educating parents about vaccine preventable diseases as well as the vaccines may be one of the ways to impart the importance of vaccines to the health of their child¹.

Keyword: Poliomyelitis, Acute encephalitis

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Received 14 January 2017, Accepted 29 January 2017

INTRODUCTION

Vaccines are one of the most important public health achievements of 20th century for their role in eradicating diseases like polio, measles, rubella other infectious diseases .Immunisation reduces the incidence and severity of infectious diseases and saves lives^{1,3}. But the public attention continues to shift from the monumental achievements of vaccination in reducing or eradicating diseases to the potential side effects and concerns about the efficacy of vaccines. The parents began to exempt immunisation vaccination to their children due to some personal beliefs and some evidences of side effects of vaccination⁴. This study systematically reviewed the literatures on controversies in immunisation vaccination in public society⁴.

HISTORICAL ROUTES OF IMMUNISATION

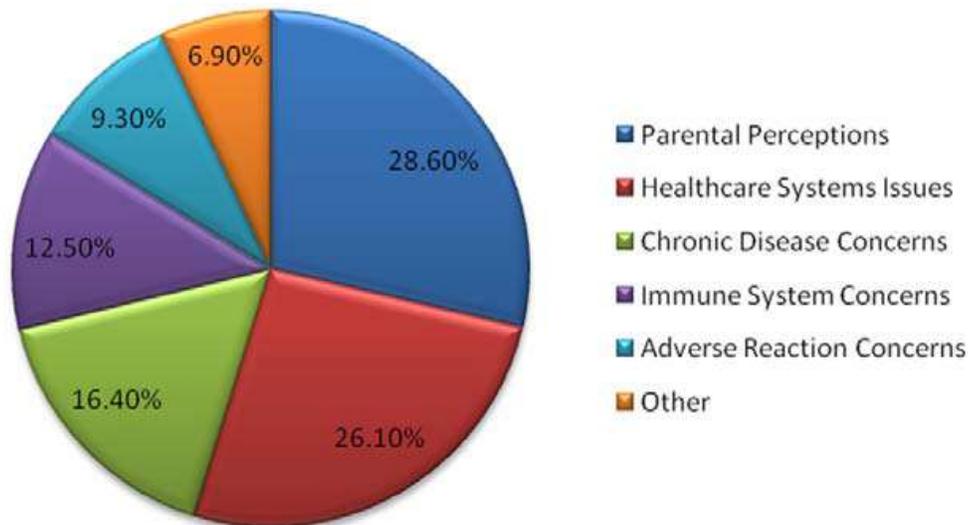
- The effects of immunisation vaccination in public society can be traced from its historical routes.
- During 1930s,an average of 61000 cases of diphtheria disease was experienced each year in England and Wales, resulting approximately 3000 deaths.
- After a national campaign in 1942 the vaccination against diphtheria were widely used and within 10 years the annual number of cases and fatalities had fallen to 376 and 23 respectively and by 1980s there was only 15 cases and one death reported.
- An effective vaccination against poliomyelitis in England after 1956 had decreased the cases 100 folds from an average of 2827 cases notified before vaccination.

Reports of Risk of Vaccination

- Supportive to the harmful effects of vaccinations studies in Australia shows reports of paralytic poliomyelitis(VAPP) caused by oral polio vaccine(OPV) once in every 2.4 million doses
- They also found that measles vaccine causes an acute encephalitis with an incidence of one in a million doses.
- Yellow fever vaccine has caused yellow fever in small number of recipients and 6 deaths have been reported from fulminant yellow fever acquired from the vaccine.

Parents and Personal Exemption

Reasons Parents Choose Personal Exemption from Vaccination



ARGUMENTS AGAINST COMPULSORY IMMUNISATION

- Respect of parental autonomy.
- Variable risk -benefit of different vaccines.
- Practical issues in enforcement of vaccination.

Philosophical Exemption

The studies of Epidemiology & Surveillance division of national immunisation program of Atlanta surveyed the conflict among parents on vaccination. They found opposition against compulsory vaccinations on the ground that natural immunity is preferable to vaccine induced immunity.

Some of the parents prefers systems like Homeopathy for their children.

Anti-vaccination Movement

- A study about anti vaccination movement in acai journal contains the beliefs of common critics. It states that vaccination is unnatural and multiple vaccination produce immune dysfunction.
- Others put forward risk of using thiomersal and mercury in vaccination which causes potential risk.

Clarification of some concepts on vaccination

Vaccine	Controversy	Comments
Rotavirus vaccine	The reports of intussusception in vaccinated persons caused withdrawal of initially licensed rotavirus vaccine. ⁵	A new live attenuated vaccine was found to be effective and less chances of intussusception, which was released in 2006. ⁵
Polio vaccine	IPV vs OPV	IPV is not a live vaccine and it carries no risk of VAPP. But studies shows OPV possess higher levels of immunity and is less expensive than IPV. ⁵
Pneumococcal vaccine	Otitis media in immunized children. ⁵	It continues as a risk ,but the vaccination is much effective against virulent serotypes. ⁵
Influenza vaccine	The chances of brain damage by Thiomersal, a preservative in vaccine. ⁵	Thiomersal had been avoided from most of vaccines even though there are no strong evidences to prove the association between brain defect and vaccines. ⁵
Hepatitis A vaccine	Need for vaccination ⁵	Dramatic decrease in Hepatitis A after vaccination. ⁵
Diphtheria-Pertussis-Tetanus vaccine	Can cause side effects like febrile seizures and high grade fever. ⁵	New vaccine available is much less reactogenic. ⁵
Hepatitis B vaccine	Parents believe that their children will not engage in high risk behaviour that lead to disease & there is no need of immunisation. ⁵	Accidents and injury during sports activities are also considered as a risk activity that cause the disease. ⁵
Varicella vaccine	Chicken pox is mild illness. ⁵	The cases of embryopathy in immunized pregnant women to varicella virus in exposed mothers had decreased in the period of 1990 to 2000 compared to non-immunized exposed women in earlier period. ⁵
Measles-Mumps-Rubella vaccine	The vaccine can cause autism. ⁵	The argument came with linking vaccine with a case of autism in Lancet in 1998. After investigation, it was found to be misleading. There is no proof for the argument. ⁵

CONCLUSION

Most of the studies conclude that benefits of immunisation far outweigh risk .Many diseases and mortality rate had decreased in present era due to vaccinations. Education approach regarding childhood vaccination need to continue to promote the health of children. The parents & public should be educated regarding diseases that the vaccines prevent, what could happen if a child is not vaccinated and how the vaccine works. The researchers should provide data on recent studies on this topic. The decreased level of immunity on spread of epidemics would increase the need of vaccination in the society rather than a compulsion.

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