

CIScoSI Study [Children Immunization Status and cases of Systemic Illness]

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Abstract

To determine the immunization status of pediatric patients under age of 5 years visiting pediatric department of tertiary care hospitals in South East Asia. The aim of this study was to appreciate the awareness and implementation of vaccination in pediatric patients who came into pediatric outpatient Department with presenting complain other than routine vaccination. we can also know the count of patients who do not complete their vaccination after birth. we can differentiate between vaccinated and unvaccinated patients and incidence of severe disease in both groups.

Immunization is a protective process which makes a person resistant to the harmful diseases prevailing in the community, typically by vaccine administration either orally or intravenously. It is proven for controlling and eliminating many threatening diseases from the community.

WHO report that licensed vaccines are available for the prevention of many infectious diseases. After the implementation of effective immunization the rate of many infectious diseases have declined in many countries of the world.

South-East Asia is far behind in the immunization coverage. An estimated total coverage is 56%-88% for a fully immunized child, which is variable between countries. Also the coverage is highest for BCG and lowest for Polio.

Introduction

Immunisation is the one of the active preventive process of health measure and an important strategy in community to provide mass protection against deadly diseases in the form of antibodies both locally protective and also systemic in a way that body is ready to handle the infection if by chance it gets exposed [1].

In 1976 World Health Organization (WHO) and United Nations Children's Fund (UNICEF) first expanded program on immunization

(EPI) in 1976 [2]. The main purpose of EPI was to prevent the deaths and disability in the pediatric population keeping in mind the cost effectiveness and easy way of mass protection. EPI offers series of vaccination that include Bacille Calimette-Guerin (BCG) and Oral polio vaccine (OPV) at birth, three doses of Diphtheria-Pertussis-Tetanus (DPT)/OPV/Hepatitis B vaccine (HBV)/ Hemophilus influenza B vaccine (Hib) at 6th, 10th and 14th week respectively, and measles vaccine at 9th and 15th month after birth. Immunisation controls and prevents the life threatening infectious diseases.

According to a study in Africa and Asia, around 2.5 million deaths are estimated due to vaccine preventable diseases less than 5 years of age, clearly indicating the significance of routine vaccination according to the EPI recommendations [3].

Side effects of vaccines are minimal but may vary according to vaccine type like local pain, redness, tenderness or swelling at injection site, itching at injection site, fatigue, headache, nausea, dizziness or fainting, fever, mild rash etc. Vaccines prepared from whole killed organisms (pertussis & influenza) may cause allergic reactions ranging from mild rash to anaphylaxis. Vaccines prepared from live attenuated virus (measles, mumps, rubella & trivalent oral poliovirus) have the risk of retaining back their pathogen city and causing the disease [4].

However, there is increased risk of acquiring vaccine preventable diseases like poliomyelitis, neonatal tetanus, measles and pneumonia and their deadly complications ranging from sore throat to death in unvaccinated childrens [5].

Methodology

This study was conducted in South East Asia, Pakistan and India being major areas of consideration, with a population of about millions of people. EPI cards were checked wherever available and if not, the subjects were inquired verbally and BCG scars were checked in children. We gathered information on characteristics such as basic demographics, socioeconomic status, reproductive history, health services utilization and immunization coverage of mother and child. The proportion of children receiving appropriate vaccination for age was calculated with its 95% confidence interval. Later, multiple logistic regression analysis was done to identify the factors independently associated with low coverage.

Inclusion

Children under 5 years of age

Exclusion

Patients who came for routine vaccination were excluded

Results

Total 243 patients were inspected. The mean age of the infants was 6.7(+/-) 2.38 months. The total number of living children ranged from 1-12 children per family. About 61% of the families had less than five children.

57% of mothers had received one dose of Tetanus Vaccine in the index pregnancy (57.3%, 95% C.I.= 54.5- 60.1) and second dose after a month was received by 74.8% of them (95% CI= 60.34-89.26). Therefore, 42.86% of the mothers received both Tetanus doses during index pregnancy and were regarded as appropriately covered.

When inquired about the total number of Tetanus doses received in lifetime by the mothers, we learnt that 51 mothers had never received Tetanus Vaccination.

Out of 243 children, 54.7% are vaccinated. Among these 33.74% have common seasonal infections and allergies for a short period of time and 20.98% have mild to moderate illnesses. While 22.23% who received incomplete vaccination and 23.04% who are not vaccinated are more prone to seasonal infections and allergies for a

longer period of time and are developing severe systemic illnesses.

Discussion

This research was conducted mainly in two departments; paediatric OPD and vaccination room of two tertiary care hospitals of Southeast Asia. Children data from 2015 to 2017 was calculated by checking their vaccination card in order to check the immunisation coverage according to EPI Schedule. Along with the vaccination card, child's BCG scar was also examined after taking consent from parents but vaccination card remained the focal point in this research and became the heart of our study because previously many studies on immunisation coverage had been done where data was collected by the memory recall of mothers which can lead to the evident recall bias, therefore we determined the immunisation frequency in this particular study on the basis of vaccination card. There are a few limitations to this study. Only those children are taken into account that came to the paediatric OPD and vaccination room with their vaccination cards. The children admitted in ward were not considered, as they were sick. There was no correlation with the presenting complaint of the child. The vaccination coverage was not correlated with the educational level of mother in this particular study. Moreover, the data was collected only from two tertiary care hospital so the result is not applicable to all population. A study in Kenya, reported that those mothers who received reminders to bring the child to the next vaccination, were three times more compliant to get their children immunised [6].

Conclusion

We concluded that education of both parents plays a significant role in child's immunization coverage. Type of house construction reflects the socio-economic status of the family and was an important factor in determining coverage. Mothers' Tetanus coverage status was significantly related with child's EPI coverage status, which reflects the health seeking behavior of a more conscious mother making good health choices for herself as well as for her child.

Vaccinated children only suffer from low-grade seasonal infections with lesser degree of systemic illness. Unvaccinated and children with incomplete vaccination are more susceptible to develop severe infections and systemic illness.

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Conflict of Interest

Authors have no conflict of interests and no grant/ funding from any organization for this study.

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