

Prevalence of measles in district Bannu

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Abstract

This was a cross-sectional descriptive study for determining the effect of vaccination in children suffering from measles in district Bannu and FR regions. It was conducted at the Paediatric Unit of Women and Children Teaching Hospital, Bannu Medical College Bannu, from July 2015 to June 2016. A total of 7,200 children were examined both from indoor and OPD. Among these, 3,210 (44.58%), were males and 3990 (55.42) were females. Children upto 15 years, suffering from measles were included both from indoor and outdoor departments. Vaccination drives in various main councils of District Bannu showed that out of the total 7200, 3,210 (53.13%), were males and 3990 (46.87%) were females. Hospital study showed that out of total 7200 children, 578 children were found to be measles infected. Among 578 children, 24 were under 12 months, 194 children were in the age group 1 to 3 years, 254 in the age group 3-5 years, 70 patients in the age group of 5-8 years and 36 in the age group 8-15 years were found to be measles infected. For confirmation of vaccination status the patient's parents were advised to bring along with them vaccination card. Only 67 (11.60%) showed vaccination cards while 511 (88.40%) did not provide vaccination cards showing that these children were non-vaccinated. From the present study, it is strongly recommended that all the children must be immunized against measles.

Keywords: Measles, District Bannu, Immunization, Children.

Introduction

According to world Health Organization (WHO) report, between 1999 and 2005 mortality rates of measles were recorded to be 345,000 globally.¹ Pakistan is on 47 precedence states as estimated by the WHO and the United Nations Children's Fund (UNICEF) and makes up a large percentage of measles losses.²⁻⁵ This is a panic situation and needs immediate intervention.

In Pakistan according to WHO estimation each year

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approximately 10 lac children below five years of age obtain measles virus contagion. To control measles, over 60 million children were targeted in 2007-08, via the national campaign and a single dose routine vaccination as given at the age of 9 months.

At present the ministry of health (MOH) in Pakistan collects measles examination data from three major sources; of which the first two sources are of inactive systems i.e. enlist data collected through the expanded programme on immunization (EPI) and collective statistics through a health management information system. In the third system, observation officers put together weekly visits to high level health facilities to keenly observe registered patients below 15 years of age suffering from acute flaccid paralysis (AFP) and keenly count up cases of patients with measles. Not any of the observation systems collect data on laboratory confirmation on routine basis. In Pakistan from January to May 2006, 10,640 suspected clinical measles cases were reported through the same system. This is much higher than the 2,981 cases in 2005 and 3,479 cases in 2007, respectively. In response to the increased number of measles cases and concerns about vaccine effectiveness, the World Health Organization (WHO), national institute of health Pakistan, and the US centers for disease control and prevention (CDC) conducted the epidemic study of patients complaining rash and fever in District Bannu. The objectives of the study were to differentiate patients with suspected measles and establish the magnitude of measles occurrence in selected areas.

Methodology

Hospital records were studied to determine the measles-affected zones in District Bannu, Khyber Pakhtunkhwa (Pakistan). Areas of District Bannu were selected from these suspected measles-affected areas since they had the maximum amount of cases, agreed to AFP surveillance sectors, and signified areas with a range of socio-economic classes.

On June 28-29, 2014, thirty eight field teams with one AFP scrutiny employee and one local nursing or university student, went to every home in the nominated areas and registered all family members. The squads requested if any family members had rashes and fever within 6

months prior to the interview and noted clinical signs and symptoms for measles for each person who reported a skin rash and fever episode. Cases were defined by the WHO-recommended standard case definition for suspected measles: fever, rash, and at least one of the following-cough, conjunctivitis, or coryza.⁵ For all cases, univariate descriptive statistics was used and the age, sex, date of rash onset and date of last vaccination were noted. All analyses were performed in Microsoft Excel software using ANOVA.

Results

District Bannu is situated in southern part of Khyber Paktunkhawa. This part of Pakistan has suffered from terrorism and IDPs for the last several years. Survey of some main councils of district Bannu was carried out which showed that out of the total 7200, individuals 3825 (53.13%), were males and 3375 (46.87%) were females (Table-1). Hospital study revealed that out of total 7200 children, 578 children were measles infected. Among 578 children, 24 were under 12 months, 194 children were in the age group 1 to 3 years, 254 in the age group 3-5 years, 70 in the age group of 5-8 years and 36 in the age group 8-15 years. Among 578 infected children only 67 (11.59 %) were vaccinated while 511 (88.41 %) were non-vaccinated. The vaccination status of children was verified by vaccination cards. Those who did not provide vaccination cards were declared as non-vaccinated. Children having received a single dose of measles vaccine, were considered vaccinated.

Table-1: Area & Gender wise prevalence of children examined in District Bannu.

Area	Total	Male	%	Female	%
Bannu City	1270	765	10.62	505	7.01
Mandan	1045	580	8.07	465	6.45
Nurar	975	410	5.70	565	7.85
Sokari	1070	570	7.91	500	6.95
Surani	1165	685	9.51	480	6.66
Ghoriwala	915	505	7.01	410	5.70
FR	760	310	4.31	450	6.25
Total	7200	3825	53.13	3375	46.87

Table-2: Vaccination Status of measles among infected children.

Age	Total	Vaccinated	% age	Non vaccinated	% age
0-01 year	24	06	1.04	18	3.11
01-03years	194	24	4.15	170	29.41
03- 05years	254	20	3.46	234	40.49
05- 08years	70	11	1.90	59	10.20
08-15 years	36	06	1.04	30	5.19
Total	578	67	11.59	511	88.41

Vaccination status along with age groups were recorded (Table-2).

Discussion

Measles is a highly contagious, serious disease caused by a virus and is one of the leading causes of death among young children even though a safe and cost-effective vaccine is available. Earlier diagnosis of measles in Pakistan were often based on the clinical measles case definition.^{6,7} In Pakistan, where measles continue to be prevalent, cold chain maintenance is mandatory, since regular mixed epidemics and similar seasonality of both diseases with highest prevalence occurs from the month of March to May.⁸ Various surveys of itchiness and fever outbreaks in Bangladesh have recognized mixed outbreaks of measles and rubella, signifying that mixed outbreaks may be relatively common in the region. A study recently conducted by WHO Integrated Management of Childhood illness for measles at Karachi found that measles was present in only 75% cases, and that many of so-called measles cases were of Dengue fever.⁹ There are some limitations to this study as not all households were informed and the results thus obtained cannot be generalized to other areas. Keeping in view of the above reasons it is strongly recommended that measles surveillance must be based on laboratory investigations in Pakistan. Due to the highest occurrence, accurate laboratory investigations for both the diseases should be conducted. In the current study we investigated area and gender wise prevalence of children examined in District Bannu revealed that among 7200 children only 3825 (53.13) were male and 3375 (46.87%) were female (Table-1). Similarly Table 2 showed that out of 578 children only 67 (11.59%) were vaccinated and remaining 511 (88.41%) were non vaccinated belonging to various age groups. Similar reports were obtained from the research work of Ayub et al.¹⁰

Conclusion

Vaccination is essential for measles elimination in Pakistan and other countries. Implementation of case-based surveillance will provides good opportunity to define the epidemiology of measles in Pakistan. Proper cold chain maintenance is necessary for effective vaccination to children, especially those of rural areas. It is strongly recommended that measles surveillance must be based on laboratory investigations in Pakistan.

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Conflict of Interest: None.

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