

AFP SURVEILLANCE; REVIEW OF MOHMAND AGENCY FATA

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ABSTRACT: Objectives: To determine the status of the AFP surveillance system at Mohmand agency FATA in a sense to improve the sensitivity of the system in 2012. **Design:** Retrospective study. **Setting:** Mohmand agency FATA. **Period:** Jan-Dec 2011. **Methodology:** The relevant information were recorded from the Rec files of these cases in accordance to the objectives of the study. **Results:** A total of 25 cases were reported in 2011 in Mohmand agency as AFP cases. Eleven were females (44%) and 14(56%) were males. The age range of these patients were from 6 months to 14 years of age. Mean age with SD was 37.12+33 months. Four cases were confirmed polio type 1 wild type cases. The frequency of cases reported from various tehsils were: safi (36%), Pindialy and ekka ghund, Halimzai 16%, Prang ghar and ambar4%, and Khweze/baizai 8%. Fourteen (56% cases) reported as urgent cases. Majority of the cases (28%) were injection neuritis, 20% cases diagnosed as traumatic neuritis, 4% as Guillain barre syndrome, and 8% as meningitis. 16 cases were cross reported from other agencies and the remaining from the agency itself. Ghallani AHQ Hospital, RHC Ekka ghund and Mechany BHU are main diagnostic and referral centers for AFP in the agency. The lab results reported 4 cases with P1 wild type virus. **Conclusions:** We have at time a bit weak surveillance system for AFP and the agency being a part of FATA and its security volatile situation, all makes it more suitable for the polio virus to circulate. There is low level of awareness and stigma associated with Polio vaccines which is alarming for public health workers. The cross reported cases ration is more which shows bit weak catch up at station level.

Key words: AFP, Surveillance, Mohmand FATA

INTRODUCTION

In 1988, the World Health Organization, together with Rotary International, UNICEF, and the U.S. Centers for Disease Control and Prevention passed the Global Polio Eradication Initiative, with the goal of eradicating polio by the year 2000¹. However, in 2011 incidence rates of the disease were dramatically reduced, and with after large reduction again in the early months of 2012, hopes for eliminating polio have been rekindled. India is the newest country to successfully eradicate Polio.

Acute flaccid paralysis (AFP) surveillance was introduced in Pakistan in 1995, and by 1998, staff in all provinces were trained in AFP surveillance and were sending monthly case reports to the Expanded Program on Immunization (EPI) office. AFP surveillance was strengthened through surveillance assessments in many districts and introduction of computerized case line listings at the provincial and national levels. The poliovirus laboratory at the National Institutes of Health in Islamabad serves as both the National Poliomyelitis Laboratory and the WHO Regional Reference Laboratory for Poliomyelitis; it performs primary poliovirus isolation from stool specimens and intratypic

differentiation of poliovirus².

To monitor AFP surveillance performance, a reported non-polio AFP rate of greater than or equal to 1 per 100,000 population aged less than 15 years is used to indicate a sensitive AFP surveillance system¹.

To the end of June 2011, 241 cases globally have been reported (216 wild polio virus type 1 and 25 wild polio virus type 3). This compares with 456 cases reported to the end of May in 2010 (399 type 1 and 57 type 3). Cases have been reported in the four endemic countries -- Pakistan, Afghanistan, Nigeria and India -- as well as in the Democratic Republic of Congo, Chad, Angola, Mali, Cote. Over 80% of all cases seen this year come from three countries: Chad, the Democratic Republic of the Congo and Pakistan. In India, only 1 case of wild poliovirus has been reported⁴.

The situation in Pakistan is complex. The lowest number of cases reported in one year was 32 in 2007. In the first six months of 2011 there were 69 cases (compared with 37 in the same period in 2010). The remaining focuses lie in three parts of Pakistan (Balochistan, Karachi and

FATA)⁵. At end of 2011 the WHO recorded a total of 650 cases worldwide. 310 of these were considered to be part of outbreaks. 16 countries recorded cases. Pakistan had the greatest number (198)⁶.

Present study was designed as to determine the status of the AFP surveillance system at Mohamnd agency FATA in a sense to improve the sensitivity of the system in 2012.

RESEARCH METHODOLOGY

Design

Retrospective study

Sampling

25 AFP cases

Duration of study

Jan to Dec 2011.

Inclusion criteria were all AFP cases reported from the agency or cross reported from other districts/agencies for mohmand agency.

Exclusion criteria was age above 15 years or flaccid cases of duration more than 60 days after paralysis developed.

Procedure and techniques: the rec files of all the AFPs were collected and analyzed for various information's to be collected. The relevant information were recorded from these cases in accordance to the objectives of the study.

Data Analysis

Data was entered in the MS Excel program and analyzed for purposeful information.

RESULTS

A total of 25 cases were reported in 2011 in Mohmand agency as AFP cases. Eleven were females (44%) and 14(56%) were males Table I.

The age range of these patients were from 6 months to 56 months of age. Mean age with SD was 37.12+33 months.

Table-I. Sex wise ration of AFP cases

Sex	No.	%age
Female	11	44
Males	14	56
Grand Total	25	100

The frequency of cases reported from various tehsils were: safi (36%), Pindialy and ekka ghund, Halimzai 16%, Prang ghar and ambar4%, and Khweze/baizai 8% (Table II).

Table-II. Tehsil wise data of AFP cases of Mohmand Agency 2011.

Tehsil	No. of AFP cases reported	%age
Ambar	01	04
Halimzai	04	16
Pindialy	04	16
Pran Ghar	01	04
Safi	09	36
Khweze Baizai	02	08
Ekka ghund	04	16
Grand Total	25	100

Map shows the Distribution of the AFP and confirmed polio cases in various tehsils of the mohmand agency (Figure 1).

Fourteen (56% cases) reported as urgent cases (Table III). Four cases were confirmed polio type 1 wild type cases (Table IV).

Majority of the cases (56%) had developed weakness due to injection neuritis and traumatic neuritis, 8% as Guillain barre syndrome, and 8% as meningitis, Table V.

The laboratory findings about virus nature are shown in the table VI. 20% of cases had enteroviruses in its stoll specimen.

Fig-1. AFP & confirmed polio cases distribution by Tehsil 2011

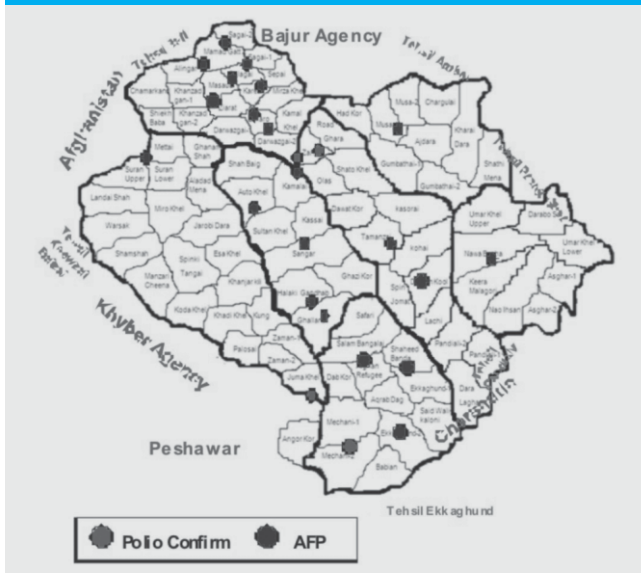


Table-III. Urgent AFP cases: Mohmand Agency 2011

AFP case	Urgent	Ordinary	%age
25	14	11	56

Table-IV. Cases classification at NIH laboratory

Classification of cases	No.	%age
Compound cases	01	04
Confirmed Polio	04	16
Discarded (NVI and EV)	20	80
Grand Total	25	100

16 cases were cross reported from other agencies and the remaining from the agency itself. Ghallani AHQ Hospital, RHC Ekka ghund and Mechany BHU are main diagnostic and referral centers for AFP in the agency.

DISCUSSION

Up to 3rd April four countries have reported cases: Pakistan 15, Nigeria 17, Afghanistan 5 and Chad 3 (total 40). In the same period in 2011 there were 86 cases⁶. As of the 5th of June 2012, the total number of reported cases worldwide stands at 67, compared to 195 at this point in 2011. Pakistan has got a strong decline of cases, 21 compared to 49 at this point in 2011. Afghanistan

Table-V. Differential diagnosis of AFP cases

Final diagnosis of AFP cases	No.	%age
Injection Neuritis	07	28
Confirmed Polio	04	16
Arthralgia/Juvenile arthritis	02	08
GBS	02	08
Meningitis	02	08
Traumatic neuritis due to IM Inj other traumatic cause	07	28
Lost to follow up	01	04
Grand Total	25	100

Table-VI. Lab reports of stool PCR

Stool 1 Result	Total	Stool 2 Result	Total
NVI	16	EV	05
EV	05	NVI	15
P1 Wild	03	P1 Wild	03
P3 VACC	01	P1+P3 VACC	01
Grand Total	25	Grand Total	25

doubles its cases, which pass from 4 at this point in 2011 to 8 in 2012. Nigeria has a very big surge of polio in the first part of 2012, with 39 cases as of the 5th of June of this year, compared to only 10 confirmed infections at this point to the precedent year⁶.

In our study there were 11(46%) females and 14 males (56%) male to females ration 1.3:1.dose children. And nearly one third of these children were zero. In another study from malaysia it was noted that Thirty-four children with AFP were admitted in hospital in the last three years with the highest number (14) in 1998. The majority of children belonged to the age group 5-9 years with a male female ratio of 1.3:1. Nearly one third of the cases were either partially vaccinated or not vaccinated et al⁷.

In present study 4 cases (16%) out of 25 AFP reported were polio confirmed cases. Another study that included

monthly visits, educational activities, etc. At the result of that study, out of 64 AFP cases 22 were poliomyelitis⁸.

NPEV (Non polio enteric viruses) were isolated from 20 of the sampling received from mohmand agency in the Laboratory. NPEV are a dominant cause of AFP and different serotypes of NPEV are randomly distributed in Pakistan. The untypable isolates need further characterization and analysis in order to determine their association with clinical presentation of a cases. Saeed M et al reported that NPEV-associated AFP were found to be 62%. The paralysis was found asymmetrical in 67% cases, the progression of paralysis to peak within 4 days was found in 72% cases and residual paralysis after 60 days of paralysis onset was observed in 39% cases associated with NPEV⁹. Our NPEV ration is less than the findings of the authors cited above⁹.

In present study 8% Of all non AFP cases were Guillan barre syndrome (GBS) of all non polio AFP cases. In a study from latin America GBS were reported , representing 52% of all nonpolio AFP cases. This study confirmed that with the disappearance of polio, GBS arises as the most common cause of AFP¹⁰. A local study also reported that out of 74 patients presented with AFP 36 were male and 38 were female. Guillain Barre syndrome and enteroviral encephalopathy were the two leading causes of acute flaccid paralysis¹¹.

Traumatic neuritis due and injection neuritis more than fifty percent cases. while Alcala H reported that out of 246 children, 42 has poliomyelitis (17%); 156 has Guillain-Barré syndrome (GBS) (63.4%); 16 had traumatic neuritis of the sciatic nerve secondary to IM injections (TNC) (6.5%); five had transverse myelitis (2%); the rest (27) had other diseases misdiagnosed as polio (10.9%)¹².

In January 2012, completion of polio eradication was declared a programmatic emergency for global public health by the Executive Board of the World Health Organization (WHO). Despite major progress since the launch of the Global Polio Eradication Initiative (GPEI) in 1988, circulation of indigenous wild poliovirus (WPV) continues in three countries (Afghanistan, Nigeria, and Pakistan). Although progress toward polio eradication

was substantial in 2011, persistent WPV circulation in 2012, particularly in Nigeria and Pakistan, poses an ongoing threat to eradication efforts, underscoring the need for emergency measures by polio-affected countries and those at risk for outbreaks after importation.

CONCLUSIONS

We have at time bit weak surveillance system for AFP and the being a part of FATA and its security volatile situation, all makes it more suitable for the polio virus to circulate. There is low level of awareness and stigma associated with Polio vaccines which is alarming for public health workers. The cross reported cases ration is more which shows its weak catch up. We need to increase the network of the AFP reporting sites. We also need to improve our zero reporting or passive surveillance system which is not functioning at time. Furthermore community surveillance system need to be established. And last but not the least the stigma to be reduced through awareness and social mobilization.

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