

Active surveillance for acute flaccid paralysis in poliomyelitis high-risk areas in southern China

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Objective On 29 October 2000 poliomyelitis was officially declared to have been eradicated from the Western Pacific Region. This article describes the results of surveillance for cases of acute flaccid paralysis (AFP) in China during the final phase of the eradication effort.

Methods We conducted hospital-based active surveillance in high-risk areas for poliomyelitis in 5 provinces of southern China (Sichuan, Yunnan, Guizhou, Guangxi and Jiangxi) between 1995 and 1997 to determine the adequacy of reporting and laboratory diagnosis of cases of AFP.

Findings A total of 1069 AFP cases occurring since 1993 were identified in 311 hospital visits. Less than 50% of AFP cases occurring in 1993 and 1994 had been reported by AFP surveillance, and laboratory diagnosis had been carried out on only a small proportion of these. However, improved cooperation between hospital sectors increased the rate of case reporting and laboratory diagnosis to 85% and 78%, respectively, in 1997. Despite this overall improvement, these two indicators were approximately 10–20% lower in Yunnan Province. Epidemiological analysis revealed that cases of clinical poliomyelitis accounted for as much as one-third of all AFP in 1993 and that some of these cases were clustered. Clusters were rarely observed after 1994. Active surveillance in the China–Myanmar border areas of Yunnan over 1995–96 detected 9 cross-border cases of clinical poliomyelitis, including 2 of wild poliomyelitis. Import of poliomyelitis was thus considered to have occurred frequently until 1996 in this border area of Yunnan. These data were important for the outbreak response immunization carried out in 1996 in the border prefectures of Yunnan.

Conclusion Our investigation confirmed a high level of AFP surveillance in poliomyelitis high-risk areas of the five provinces and provided valuable information on the interruption of wild poliovirus circulation in southern China that will be of use to countries in other regions that have yet to eradicate poliomyelitis.

Keywords: paralysis, diagnosis, virology; muscle hypotonia, virology; poliomyelitis, diagnosis, epidemiology; disease notification, methods; diagnosis, differential; polioviruses, isolation and purification; epidemiologic surveillance; China; Myanmar.

Mots clés: paralysie, diagnostic, virologie; hypotonie musculaire, virologie; poliomyélite antérieure aiguë, diagnostic, épidémiologie; notification des maladies, méthodes; diagnostic différentiel; poliovirus, isolement et purification; surveillance épidémiologique; Chine; Myanmar.

Palabras clave: parálisis, diagnóstico, virología; hipotonía muscular, virología; poliomieltis, diagnóstico, epidemiología; notificación de enfermedad, métodos; diagnóstico diferencial; poliovirus, aislamiento y purificación; vigilancia epidemiológica; China; Myanmar.

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Voir page 109 le résumé en français. En la página 109 figura un resumen en español.

Introduction

In 1988, WHO launched a global initiative to eradicate poliomyelitis by the year 2000 (1). In 1994, the Pan American Health Organization (PAHO) achieved interruption of wild poliovirus

transmission in the Americas, with the last case of indigenous poliomyelitis being detected in Peru in 1991 (2). PAHO's success indicates that poliomyelitis eradication is a realistic goal and has provided encouragement to other countries to develop eradication activities (3). Efforts towards this end have successfully brought about the eradication of

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poliomyelitis also in the Western Pacific Region, as announced on 29 October 2000 (4–6). The present article provides an account of surveillance activities in high-risk areas of southern China during the final stages of the eradication effort. As such, experiences gained will be of interest to countries in other regions where poliomyelitis is yet to be eradicated.

In China, the most recent poliomyelitis outbreaks began in 1989 in the eastern provinces of Shandong, Henan and Anhui. More than 10 000 cases had been reported nationwide by the end of 1991 (7). During this period, a number of provinces conducted oral poliovirus vaccine (OPV) supplemental immunization programmes based on their own policies. In December 1993, coordinated national immunization days (NIDs), consisting of two rounds of immunization sessions, began targeting about 80 million children. After 1996 this programme was continued on a smaller scale as subnational immunization days (SNIDs) (4, 5). As a result, poliomyelitis outbreaks declined in frequency, and the last 6 indigenous cases were detected in 1994 (8). Four cases of wild virus infections detected in Yunnan Province in 1995 and 1996 were imported from a poliomyelitis-endemic country (4, 5). Although these results indicated that China was achieving interruption of wild poliovirus circulation, reliable surveillance for cases of acute flaccid paralysis (AFP) had to be carried for proper evaluation.

In the five southern provinces of Sichuan, Yunnan, Guizhou, Guangxi and Jiangxi, most areas are economically underdeveloped and there is substantial variability in the quality of public health services. Unlike the northern provinces of China, endemic wild poliomyelitis cases were detected in these southern provinces until relatively recently: up to 1992 in Sichuan, Guangxi and Jiangxi and up to 1993 in Yunnan and Guizhou (9). Yunnan and Guangxi also shared a border with polio-endemic countries. Furthermore, development of AFP surveillance was delayed until around 1994. We investigated the adequacy of case reporting and laboratory diagnosis of AFP cases in hospitals throughout these five provinces in view of their importance for poliomyelitis eradication in China. This active surveillance thus became a unique opportunity to evaluate the development and reliability of AFP surveillance that was fully dependent on reporting from lower levels.

Methods

AFP surveillance

The Chinese Ministry of Health has specified 14 paralytic conditions occurring among children under 15 years of age, including poliomyelitis and other paralytic illnesses such as Guillain-Barré syndrome and non-poliovirus myelitis, as disorders to be reported to the AFP surveillance. All county epidemic prevention stations (EPS) were requested to investigate AFP cases and collect stool specimens

from these cases within 24–48 h of notification. The main guidelines for AFP surveillance were as follows: AFP reporting rate of >1 per 100 000 children aged <15 years; >80% of cases investigated within 24–48 h of notification; >80% of cases with two stool samples taken within 14 days of the onset of paralysis, i.e. adequate specimens (9).

The patients' demographic and clinical data, together with two stool samples, were forwarded to the provincial EPS. The data are then entered on computer and the stool samples examined for viruses before being sent for laboratory diagnosis. Any polioviruses isolated were sent to the National Poliovirus Laboratory at the Chinese Academy of Preventive Medicine (CAPM) in Beijing for an intratypic differentiation test.

Active surveillance

We investigated facilities mainly at the prefecture and county level. Prefectural hospitals play an important role in community medical services as specialty referral hospitals. We reviewed patient admission lists, usually for the previous 3 years, of hospital paediatric wards and other related unit registers to which AFP cases may have been referred. If an AFP case was found, the patient's clinical course, as recorded in the admission record, was studied in detail. Cases identified in outpatient units usually lacked a clinical record, but if AFP could not be excluded they were included in the study. The reporting and laboratory diagnosis of these cases were confirmed by comparison with AFP case line lists from the provincial EPS. To investigate any progressive improvement in AFP surveillance, we made a second visit to a number of hospitals, particularly at the prefectural level, at 1- to 2-year intervals.

After each hospital investigation, a study team discussed findings with staff of hospitals, local EPS and public health bureau. This feedback seemed to be useful in promoting case reporting and other surveillance activities.

Diagnosis of clinical poliomyelitis

Diagnosis of poliomyelitis was based on the clinical course recorded by hospital-based physicians. Possible cases of poliomyelitis were classified into 3 groups. Group A consisted of patients who developed the typical course of poliomyelitis, characterized by rapid onset of paralysis with fever and neurological signs consistent with this diagnosis (decreased muscle power, decreased muscle tone usually reflected in the reduction or absence of deep tendon reflexes, and appearance of muscle atrophy at affected limbs). Group B consisted of patients with atypical courses or those for whom clinical information was limited. Cases with no documented episode of fever or that lacked documentation of one of the essential neurological signs were assigned the diagnosis "atypical". The majority of outpatients were placed in this group because of their poor clinical records. Group C

included two other kinds of cases: some had no signs of poliomyelitis or flaccid paralysis, despite a recorded diagnosis of one of these illnesses. The remaining patients had signs of upper motor neuron involvement including Babinski signs or ankle clonus, but which were not diagnostic of poliomyelitis.

Only cases in groups A and B were defined as clinical poliomyelitis in this study. Results of viral isolation were not used to diagnose clinical poliomyelitis unless stated otherwise. Although false-positive cases may have been included, they would not have fundamentally affected the results.

Geographical clustering of clinical poliomyelitis

We studied the geographical clustering of clinical poliomyelitis to identify possible outbreaks among the cases occurring between 1993 and 1997. Following the approach described by Hoekstra et al., we defined a cluster as the occurrence of two or more cases of clinical poliomyelitis in one county or in adjacent counties with the date of onset of paralysis within 2 months of each other (10). Cases negative for wild poliovirus in adequate specimens were excluded from this analysis.

Results

Active surveillance

We surveyed 311 hospitals in 62 of 71 prefectures from 1995 to 1997 (Table 1). Of these hospitals, 104 (33%) were at the prefectural levels or higher. We made second visits to 53 facilities, 32 (60%) of which were prefectural and provincial facilities. In the five study provinces, there were 125 prefectural hospitals without facilities for special diseases and 70 (56%) of such hospitals were investigated. Similarly, 185 of 551 (33%) county hospitals were investigated. Visits were made to 2 of 22 (9%) provincial hospitals, where usually AFP surveillance presented few problems.

We surveyed Yunnan Province most frequently because, between 1995 and 1996, 4 patients with poliomyelitis associated with wild poliovirus were found to have entered it to seek medical care by crossing its border with Myanmar. Active surveil-

lance was performed more intensively at facilities close to interprovincial borders and international borders with Myanmar or Viet Nam (Fig.1). These "marginal zones" are considered to be at the highest risk for an outbreak of poliomyelitis.

AFP and clinical poliomyelitis cases

Between 1993 and 1997, a total of 1069 AFP cases were identified (Table 2), 715 (66%) of which were found in prefectural hospitals. Sichuan Province, whose population alone represents 40% of the total population of the five provinces, accounted for one third, i.e. 378, of the cases in this study. A total of 311 AFP cases in 1995 and 352 cases in 1996 corresponded roughly to 30–35% of the expected annual number of such cases in the five provinces, estimated from the total population and the average national rate of non-poliomyelitis AFP in 1996 (1.4 cases per 100 000 children) (5).

Of the 1069 AFP cases, 117 were classified as clinical poliomyelitis (group A, 96 cases; group B, 21 cases); 12 group C cases were excluded from the analysis. Poliomyelitis was responsible for one-third of all AFP cases in 1993, but <10% in subsequent years. The proportion of clinical poliomyelitis cases was somewhat higher in Yunnan and Guangxi Provinces even after 1994. In Yunnan, this phenomenon was associated with heightened surveillance in border areas after the import of poliomyelitis cases from Myanmar in 1995.

The characteristics of 117 patients with clinical poliomyelitis were as follows: 88 (75%) of 116 patients were aged ≤ 3 years and 71 (73%) of 97 had received two or fewer doses of OPV. Unilateral paralysis of the lower limbs was observed in 82 (70%) of 117 patients; documented episodes of fever were present at the time of onset in 88 (89%) of 98 patients. Although these characteristics are consistent with a diagnosis of paralytic poliomyelitis, wild poliomyelitis was established virologically in only two of the cases imported from Myanmar in 1995 and 1996.

Case reporting and laboratory diagnosis

Reporting and laboratory diagnosis were performed for only a small portion of clinical poliomyelitis cases

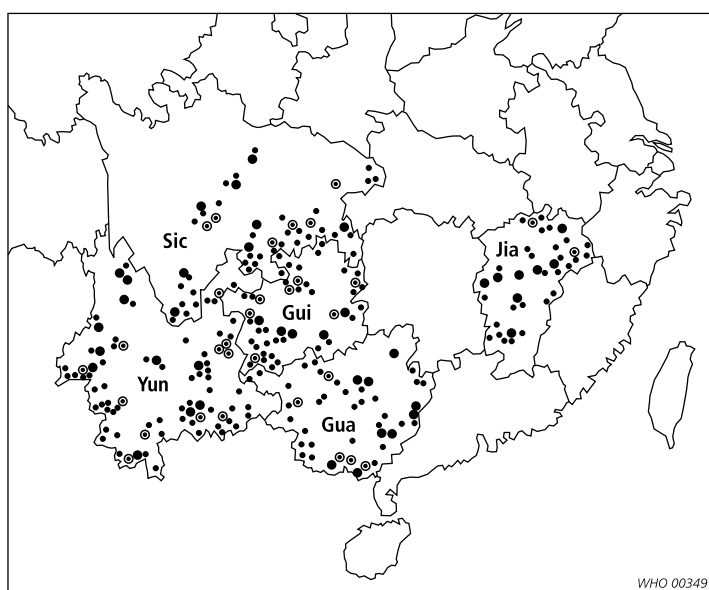
Table 1. Active surveillance in the five study provinces in southern China

Province	No. of prefectures		No. of hospitals ^a			No. of hospitals investigated in: ^a									
						1995			1996			1997			
	All	Visited	Prov	Pref	County	Prov	Pref	County	Prov	Pref	County	Prov	Pref	County	
Sichuan	21	14	6	30	181	1	2	4	1 (1) ^b	5	12			11 (5)	20 (1)
Yunnan	17	15	3	26	123		7	15		16 (8)	36 (9)			11 (4)	25 (8)
Guizhou	9	9	3	20	80	1	8	10		2	12	1 (1)		7 (5)	11
Guangxi	13	13	6	31	83		8	7		2	12			9 (5)	15 (3)
Jiangxi	11	11	4	18			4	10		2	8			6 (2)	10 (1)
Total	71	62	22	125	551	2	29	46	1 (1)	27 (8)	80 (9)	1 (1)		44 (22)	81 (13)

^a Prov = provincial hospital; Pref = prefectural hospital.

^b Figures in parentheses are the number of hospitals visited a second time.

Fig. 1. Location of prefectural and county hospitals visited for AFP active surveillance. Sic = Sichuan Province; Yun = Yunnan Province; Gui = Guizhou Province; Gua = Guangxi Province; Jia = Jiangxi Province; ● = prefectural hospitals; • = county hospitals; ⊙ = prefectural hospitals surveyed twice



in 1993 (Table 3). During 1994 and 1995 case reporting improved steadily, but laboratory diagnosis was performed in less than half of all AFP cases. Both these indicators showed further improvement in 1997: case reporting and laboratory diagnosis reached 85% and 78%, respectively. We also analysed a group of 691 AFP cases found in 32 prefecture hospitals that were visited twice. Sequential changes of the two indicators were quite similar to the overall improvement (data not shown). The rate for reporting or for laboratory diagnosis of cases of clinical poliomyelitis was approximately 10–20% higher than that of AFP cases, excluding 1997 when the number of cases of clinical poliomyelitis was relatively small.

Despite the high level in recent years, the development of surveillance was delayed in Yunnan Province (Fig. 2). Even for the period 1996–97, the

rates of case reporting and laboratory diagnosis (59% and 41%, respectively) for Yunnan were the lowest in the five provinces studied. The corresponding rates for cases classified as clinical poliomyelitis in this province were higher: 81% and 75%, respectively.

Virus isolation and case classification

Poliovirus was isolated from 27 of the 1069 AFP cases (Table 3). Of the 65 clinical poliomyelitis cases for which stool specimens were available, 17 (26%) were positive for poliovirus. Poliovirus was also isolated from 10 patients with non-polio AFP. The poliovirus-positive cases included two children from Yunnan Province with wild poliovirus type-1 infection, who were among the four patients with wild poliomyelitis virus who came from Myanmar in 1995 and 1996. The remaining 25 patients were infected with Sabin vaccine strains. Non-polio enteroviruses were also isolated from 11 patients with clinical poliomyelitis.

China introduced virological case classification in selected surveillance-advanced provinces starting in 1996, and in the whole country starting in 1997. In accordance with this policy, we classified 44 cases of clinical poliomyelitis in these 2 years. Of the 34 cases in 1996, one was a case of wild poliomyelitis imported from Myanmar. A total of 24 cases negative for wild poliovirus in adequate specimens were excluded, while 9 cases with no or inadequate specimens remained as “compatible” cases. Similarly, among the 10 reports in 1997 there were no cases of wild poliomyelitis. Six cases were excluded and 4 cases remained as compatible cases. Of the total of 13 compatible cases, only 6 (4 in 1996 and 2 in 1997) had been immunized with <3 doses of OPV. Geographical clustering was not observed among these 6 cases.

Clustering of clinical poliomyelitis

Of the 117 cases of clinical poliomyelitis, 61 that were negative for wild poliovirus in adequate specimens were excluded from this analysis (Table 4). In 1993, there were 20 cases in 14 counties; 3 clusters

Table 2. Distribution of AFP cases identified by active surveillance in the five study provinces in southern China

Province	Total AFP cases	No. of AFP cases								
		1993			1994–95			1996–97		
		All ^a	P ^b	P/All	All ^a	P ^b	P/All	All ^a	P ^b	P/All
Sichuan	378	14	3	21.4%	185	14	7.5%	179	4	2.2%
Yunnan	247	27	6	22.2%	123	15	12.1%	97	16	16.4%
Guizhou	197	4	1	25.0%	86	7	8.1%	107	9	8.4%
Guangxi	143	13	8	61.5%	68	12	17.6%	62	8	12.9%
Jiangxi	104	10	5	50.0%	50	2	4.0%	44	7	15.9%
Total	1069	68	23	33.8%	512	50	9.7%	489	44	8.9%

^a All = No. of cases of AFP.

^b P = No. of cases of clinical poliomyelitis.

involving 9 cases were observed in 5 (35%) of the 14 counties. A cluster of two cases was also observed in 2 (28%) of 7 counties in 1994 and another cluster of 3 cases in 2 (8%) of 25 counties from 1995 to 1997. In the most recent 3-year period cases were scattered. Central Jiangxi, southern Guangxi and north-eastern Yunnan were identified as sites of a possible outbreak of poliomyelitis in 1993. A cluster in 1994 existed in south-eastern Sichuan, and another cluster in 1995 occurred in the China–Myanmar border area in Yunnan and included a case of wild poliomyelitis imported from Myanmar.

Discussion

Wild poliomyelitis was identified in 6 patients in Xinjiang, Hubei and Fujian Provinces in 1994, but no indigenous cases of wild poliomyelitis have been detected in China since then (8). Although four patients with wild poliomyelitis were detected in Yunnan Province between 1995 and 1996, they had crossed over from Myanmar (4, 5). At that time China was therefore close to achieving the goal of poliomyelitis eradication. As a prerequisite for certification, however, the quality of AFP surveillance in high-risk areas of southern China, where the transmission of wild poliovirus persisted longest, had to be guaranteed. The Ministry of Health defined a high-risk province or prefecture as one sharing a border with a poliomyelitis-endemic country, with wild poliomyelitis detected within the previous 3 years, AFP reporting incidence <1.0, <60% rate of specimen collection, and <90% coverage for routine OPV (4, 11). At the time of the present study, these conditions prevailed in the five southern provinces evaluated.

Although China launched AFP surveillance in 1990, the system was generally passive with high levels of underreporting until 1993–94, except in Shandong and neighbouring provinces (9, 12). It is possible that the reporting of poliomyelitis itself was unsatisfactory in most provinces during this period. From 1994 genuine AFP surveillance, targeting all types of AFP for reporting and laboratory diagnosis, was adopted by an increasing number of provinces in China (9): in 1994 the average non-poliomyelitis AFP reporting rate in the five southern provinces was 0.51 per 100 000 children and the frequency of adequate specimens was only 32%.^a

The present study confirms the improvement in AFP surveillance in poliomyelitis high-risk areas of southern China. According to provincial data for 1995 from the same sources, the average rates of non-poliomyelitis AFP rose to 1.3 per 100 000 children, with more than 80% of cases undergoing laboratory diagnosis. This reporting rate was very

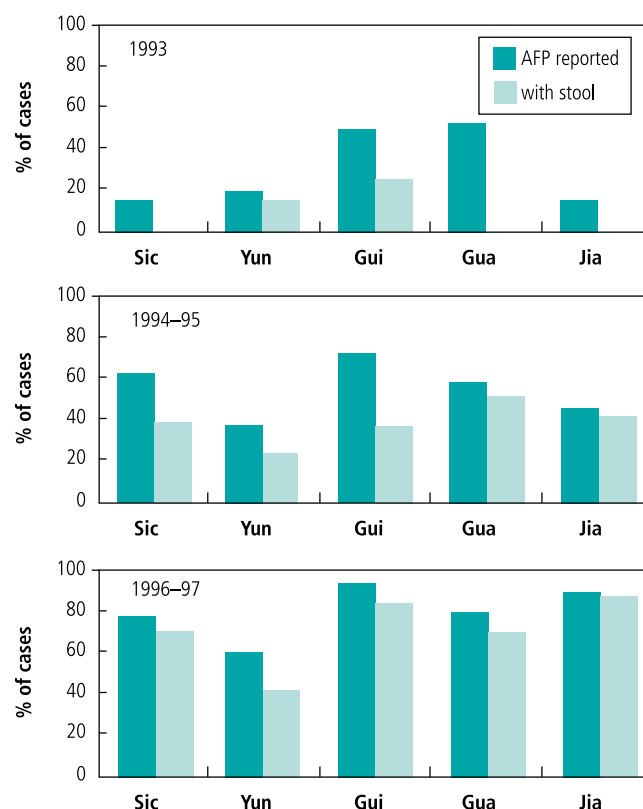
Table 3. Reporting and laboratory diagnosis of AFP cases identified by active surveillance in the five study provinces in southern China

Year	Total cases	No. reported	No. with stool specimen	No. with poliovirus isolate	No. with wild poliovirus ^a
All AFP cases					
1993	68	17 (25.0) ^b	2 (2.9)	1	0
1994	201	94 (46.7)	50 (24.8)	2	0
1995	311	192 (61.7)	140 (45.0)	5	1
1996	352	266 (75.5)	228 (64.7)	12	1
1997	137	117 (85.4)	107 (78.1)	7	0
Total	1069	686 (64.1)	527 (49.2)	27	2
Clinical poliomyelitis					
1993	23	11 (47.8)	2 (8.6)	1	0
1994	19	13 (68.4)	9 (47.3)	2	0
1995	31	25 (80.6)	18 (58.0)	4	1
1996	34	31 (91.1)	29 (85.2)	8	1
1997	10	9 (90.0)	7 (70.0)	2	0
Total	117	89 (76.0)	65 (55.5)	17	2

^a One patient in 1995 and another in 1996 were from Myanmar and they were infected with wild poliovirus type 1: all others were infected with Sabin strains.

^b Figures in parentheses are percentages.

Fig. 2. Reporting and laboratory diagnosis of AFP cases in five southern provinces of China, 1993–97. For practical purposes, data were summarized for 1994 and 1995 and for 1996 and 1997. For overall rates of the two indicators in a different year, refer to Table 3. Rates for reporting and laboratory diagnosis in Yunnan, i.e., 57% and 37% for 1996, and 73% and 60% for 1997, were the lowest of the five provinces. See Fig. 1 for abbreviations of provincial names.



^a The non-polio AFP rate and specimens collection rate were calculated based on provincial surveillance data submitted to the Annual Meeting for Polio Eradication in the Southern Five Provinces, Yunnan, Kunming, March 1996.

Table 4. **Clusters of clinical poliomyelitis cases identified by active surveillance in the five study provinces in southern China**

Year	Clinical poliomyelitis		Clusters of cases ^a			Location of cluster
	No. of cases	No. of counties with cases	No. of clusters	No. of cases	No. of counties with cases	
1993	20	14	3	9	5	Central Jiagnxi, southern Guangxi, north-eastern Yunnan
1994	10	7	1	2	2	South-eastern Sichuan
1995–97	26	25	1	3	2	Western Yunnan (China/Myanmar border area)

^a Cluster indicates the occurrence of 2 or more cases in any one county or in adjacent counties with onset of paralysis within 2 months (see ref. 10).

close to the national average for 1995 (1.4 per 100 000 children) (4). The present results demonstrate that a significant proportion of AFP cases was still underreported in the high-risk areas in 1995. Subsequently, it was confirmed that reporting and laboratory diagnosis improved markedly from 1996 to 1997, reaching approximately 80% for both indicators. Since active surveillance was conducted in over 80% of all prefectures of the five provinces, the observed changes were not independent of the recent improvement in AFP surveillance throughout the provinces. However, caution is needed when interpreting these results because sites for investigation were not selected in a randomized manner. Another factor that strongly influences the quality of AFP surveillance is adequacy of stool specimens. Although we did not address this issue, the frequency of adequate stool specimens ostensibly exceeded 80% nationwide and 70% in the five provinces from 1996 to 1997 (5, Chinese Academy of Preventive Medicine, unpublished observation, April 1997).

Official data indicated that poliomyelitis cases associated with wild poliovirus occurred in Sichuan, Guangxi and Jiangxi up to 1992 but that wild poliomyelitis cases were not detected in 1993 or subsequently (8, 9). In active surveillance, however, cases of clinical poliomyelitis constituted a significant proportion of all AFP cases in 1993, and there were some clusters in Yunnan, Guangxi and Jiangxi. A similar cluster was also detected in Sichuan in 1994. These findings may indicate that outbreaks of poliomyelitis continued until 1993 in Guangxi and Jiangxi, and until 1994 in Sichuan. A cluster detected in 1995 in the China–Myanmar border area in Yunnan included a case of wild poliomyelitis imported from Myanmar (see below). Although active surveillance detected a number of cases of clinical poliomyelitis, it was also apparent that as AFP surveillance developed many cases were reported and then subjected to laboratory diagnosis. Of the 44 cases of clinical poliomyelitis in 1996–97, for example, only 6 were finally considered to be genuine “compatible” cases, but there was no geographical clustering and it is hard to imagine that these cases could be associated with wild poliovirus. In China,

annual campaigns of supplemental immunization, NIDs and SNIDs continued nationwide and no outbreak of indigenous wild poliomyelitis was detected anywhere after 1995, despite the existence of high-level virus surveillance (4, 5). Rather, vaccine-associated paralysis or infections with non-polio enteroviruses, which are known to circulate in southern China, should be considered as possible etiologies (5, 13). Although active surveillance and analysis of clinical poliomyelitis cases were shown to be useful, the results clearly indicate that case reporting by AFP surveillance and subsequent laboratory diagnosis were essential to evaluate the interruption of wild poliovirus circulation.

The control of poliomyelitis outbreaks in the China–Myanmar border areas was crucial for eradicating this disease because local residents of both countries can cross the border daily. Yunnan Province began reporting cross-border AFP cases in 1995 after our active surveillance detected unreported Myanmar nationals as patients in the Dehong prefectural hospital, in the western border area. Subsequently, 4 cross-border poliomyelitis cases associated with wild poliovirus were identified by AFP surveillance in 1995 and 1996 (4, 5). Active surveillance in the same period detected 9 cross-border cases of clinical poliomyelitis, including 2 of the 4 cases with wild poliovirus infections mentioned above; 3 of the remaining 7 cases had not been reported. As a response to the import of wild poliomyelitis, the Ministry of Health and Yunnan Province conducted an outbreak response immunization in consultation with WHO, the Centers for Disease Control and Prevention (CDC), and the China Polio Control Project of the Japan International Cooperation Agency. Approximately 300 000 children were immunized by OPV in each immunization round in March and April 1996 in five border prefectures. It was thus considered that information from active surveillance formed an important basis for the successful immunization activity in the border areas.

In 1997, two cross-border AFP cases were detected by AFP surveillance and excluded from the poliomyelitis count. However, AFP surveillance in

Yunnan remained generally low compared with the other 4 southern provinces. Active surveillance should be continued in the border areas in order to strengthen detection of any cross-border AFP cases even after the declaration that the Western Pacific Region is now free of poliomyelitis. Finally, Asian or African countries might consider introducing this kind of active surveillance to encourage the development of AFP surveillance, particularly in areas where wild poliomyelitis is still endemic. The experience in Yunnan Province suggests that in areas bordering poliomyelitis-endemic countries, surveillance is useful for the rapid detection of cross-border cases and for obtaining other information critical for a subsequent outbreak response immunization. ■

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Résumé

Surveillance active de la paralysie flasque aiguë dans les zones à haut risque de poliomyélite du sud de la Chine

Objectif Le 29 octobre 2000, la poliomyélite a été officiellement déclarée éradiquée dans la Région du Pacifique occidental. L'article décrit les résultats de la surveillance des cas de paralysie flasque aiguë en Chine au cours de la phase finale de l'éradication.

Méthodes Entre 1995 et 1997, nous avons réalisé une surveillance active en milieu hospitalier dans les zones à haut risque de poliomyélite de 5 provinces du sud de la Chine (Sichuan, Yunnan, Guizhou, Guangxi et Jiangxi) afin de déterminer le niveau de notification et de diagnostic biologique des cas de paralysie flasque aiguë.

Résultats Lors de 311 visites d'hôpitaux, nous avons répertorié 1069 cas de paralysie flasque aiguë survenus depuis 1993. Moins de 50 % des cas survenus en 1993 et 1994 avaient été rapportés dans le cadre de la surveillance de la paralysie flasque aiguë et peu de cas avaient fait l'objet d'un diagnostic biologique. Cependant, une amélioration de la coopération entre secteurs hospitaliers a permis de faire passer en 1997 le taux de notification des cas à 85 % et la proportion de cas ayant fait l'objet d'un diagnostic biologique à 78 %. Malgré cette amélioration générale, ces deux indicateurs accusaient un retard d'environ 10 à 20 % dans la

province du Yunnan. L'analyse épidémiologique a montré que les cas de poliomyélite clinique représentaient jusqu'à un tiers de l'ensemble des cas de paralysie flasque aiguë en 1993 et que certains d'entre eux étaient regroupés dans le temps et dans l'espace. Les cas groupés devenaient rares après 1994. Une surveillance active réalisée en 1995–1996 dans les zones du Yunnan proches de la frontière du Myanmar a permis de détecter 9 cas transfrontaliers de poliomyélite clinique dont 2 étaient dus au virus sauvage. L'importation de la poliomyélite a donc été considérée comme fréquente jusqu'en 1996 dans ces régions frontalières. Ces données ont joué un grand rôle dans la vaccination pratiquée en 1996 dans les préfectures frontalières du Yunnan en réponse à une flambée de cas.

Conclusion Nos investigations ont confirmé le niveau élevé de surveillance de la paralysie flasque aiguë dans les zones à haut risque de poliomyélite des 5 provinces et ont donné d'utiles informations sur l'interruption de la circulation du poliovirus sauvage dans le sud de la Chine, qui serviront aux pays d'autres régions dans lesquels la poliomyélite doit encore être éradiquée.

Resumen

Vigilancia activa de la parálisis flácida aguda en zonas de alto riesgo de poliomiéлитis en el sur de China

Objetivo El 29 de octubre de 2000 se declaró oficialmente erradicada la poliomiéлитis de la Región del Pacífico Occidental. En este artículo se describen los resultados de la vigilancia de los casos de parálisis flácida aguda (PFA) que se instauró en China durante la fase final del esfuerzo de erradicación.

Métodos Entre 1995 y 1997 llevamos a cabo una vigilancia nosocomial activa en zonas de alto riesgo de

poliomiéлитis de cinco provincias del sur de China (Sichuan, Yunnan, Guizhou, Guangxi y Jiangxi) a fin de determinar la calidad de la notificación y el diagnóstico de laboratorio de los casos de PFA.

Resultados En 311 visitas a hospitales se identificaron 1069 casos de PFA ocurridos desde 1993. Menos del 50% de los casos de PFA registrados entre 1993 y 1994 habían sido notificados mediante el sistema de vigilancia

de la PFA, y sólo en una pequeña proporción de esos casos se había efectuado un diagnóstico de laboratorio. Sin embargo, la mejora de la cooperación entre sectores de los hospitales se tradujo en un aumento de las tasas de notificación de casos y de diagnóstico de laboratorio, que llegaron a ser del 85% y del 78%, respectivamente, en 1997. Pese a esa mejora general, el nivel alcanzado por los dos indicadores en la provincia de Yunnan fue algo inferior (aproximadamente un 10%-20%). El análisis epidemiológico reveló que los casos de poliomielitis clínica representaron hasta una tercera parte de los casos de PFA en 1993, y que algunos de esos casos estaban agrupados. A partir de 1994 rara vez se observaban agrupamientos. La vigilancia activa en las zonas de Yunnan colindantes con Myanmar a lo largo de

1995-1996 permitió detectar 9 casos transfronterizos de poliomielitis clínica, incluidos 2 causados por el poliovirus salvaje. Se consideró por tanto que la importación de poliomielitis había sido un hecho frecuente hasta 1996 en esa zona limítrofe de Yunnan. Estos datos fueron importantes para la inmunización de respuesta a brotes llevada a cabo en 1996 en las prefecturas fronterizas de Yunnan.

Conclusión Nuestra investigación confirmó un alto nivel de vigilancia de la PFA en las zonas de alto riesgo de poliomielitis de las cinco provincias, y proporcionó una valiosa información respecto a la interrupción de la circulación del poliovirus salvaje en el sur de China. Esa información puede ser de utilidad para los países de otras regiones que aún no han erradicado la poliomielitis.

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