

## Acute flaccid paralysis: a five-year review of cases managed by physiotherapy at the University College Hospital, Ibadan

Tal-hatu K.Hamzat\* and Temiloluwa T. Omotade

*Department of Physiotherapy, College of Medicine, University College Hospital, Ibadan, Nigeria,*

\*Author for Correspondence: PMB 5017 GPO Dugbe Ibadan, Nigeria. Tel: +234-28101995/8052457016; [tkhamzat@comui.edu.ng](mailto:tkhamzat@comui.edu.ng)/[talkzat@yahoo.com](mailto:talkzat@yahoo.com)

### SUMMARY

A 5-year (1999-2004) review of acute flaccid paralysis (AFP) cases managed at the physiotherapy clinic of the University College Hospital, Ibadan Nigeria was carried out. Collection of data involved retrieving the records of all patients seen at the physiotherapy clinic during the study period, from which the paediatric cases were sorted out. The treatment records cards of patients with acute flaccid paralysis were identified and reviewed. Information on age, gender, immunization history, and specific physician diagnosis and discharge practice were collated. A total of 757 paediatric cases reviewed out of which 132 (17.4%) were AFP case, with mean age of  $44.31 \pm 33.03$  months and a 1.2:1.0 male: female ratio. Sciatic nerve palsy accounted for majority (72.0%) of the AFP; only 43.2% of the patients had completed immunization before the onset; majority of the cases (78.8%) were referred to physiotherapy within 6 months of onset and the discharge pattern revealed that only 9.8% of the patients were formally discharged. With injection palsy accounting for majority of the AFP cases, the need for caution. In administration of intramuscular injections at the buttocks of children with febrile illnesses is suggested. Importance of adequate documentation of clinical information by clinicians is also emphasised.

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### Introduction

Acute Flaccid Paralysis (AFP) was defined by the Canadian Paediatric Society as acute onset of focal weakness or flaccid paralysis without other obvious cause, such as trauma, in children less than 15 years old [1]. Medical conditions that fall under the clinical diagnosis of AFP vary from continent to continent. In Malaysia, Guillain Barré syndrome, central nervous system infection and transverse myelitis were listed as AFP [2]. Apart from Guillain Barré syndrome and transverse myelitis that were the most common, the conditions classified under AFP in Australia included acute disseminated encephalomyelitis, tick-bite paralysis and infant botulism [3]. In South West Nigeria, the classification of AFP included traumatic sciatic nerve palsy, acute polyneuritis, neuropathy and anterior poliomyelitis [4]. Whatever the definition of acute flaccid

paralysis, the physiotherapist plays a significant role in management of its clinical presentations. Several studies on prevalence of acute flaccid paralysis have been carried out [5, 6, 7, 8], but there is a dearth of such studies in Nigeria. This 5-year (1999-2004) clinical review was carried out to investigate the prevalence of acute flaccid paralysis referred to, and managed at the paediatrics unit of the Physiotherapy clinic of the University College Hospital, Ibadan. Specifically, the age and gender distribution pattern, specific clinical conditions, immunisation history and the time lag between episode of AFP and first physiotherapy consultation were studied.

### Materials and Methods

#### *Procedure for Data Collection*

The protocol for this study was approved by the joint ethical committee of the University of

Ibadan/University College Hospital (UI/UCH) Institutional Review Board. Data sources were the referral cards and physiotherapy records of all patients managed at the Physiotherapy clinic, University College Hospital, Ibadan between September 1999 and August 2004.

The procedure for this review involved retrieving the records of all patients seen at the physiotherapy clinic during the study period, from which the paediatric cases were sorted out. The referral cards of patients with acute flaccid paralysis were identified and reviewed. The following information from the cards was then entered into a spreadsheet specifically designed for the study: Hospital number, age, gender, immunization history, specific clinical physician diagnosis, the time lag between episode of AFP and the time of physiotherapy consultation, and their discharge practice. Data were analysed by calculating the mean and percentages. The frequency distributions of various items were composed and presented in tables.

**Results**

The total number of paediatrics cases seen at the Paediatrics unit of the Physiotherapy clinic of the University College Hospital, Ibadan between September 1999 and August 2004

was 757, out of which 132 (17.4%) were cases of acute flaccid paralysis (AFP). All the patients were first attendants at the paediatrics unit of the Physiotherapy clinic. The gender distribution pattern of the AFP cases showed a 1.2: 1.0, male: female ratio. Their ages ranged between 46 days and 12 years ( $44.31 \pm 33.03$  months). The 0-2 years age group accounted for the highest (45.5%) proportion of the AFP cases. The age distribution pattern is shown in Table 1. The prevalence of AFP cases by clinical condition is presented in Table 2. Sciatic nerve palsy (72.0%) was the most prevalent condition. A total of 57 (43.2%) patients had completed immunization before the paralysis set in; 27(20.5%) had incomplete immunization and immunisation information of 48(36.4%) was not recorded. Majority of the patients 102 (78.8%) were referred within six months of the onset of acute flaccid paralysis, although 12 (9.1%) of the cases were referred over 25 months after the onset as shown in Table 3. The discharge practice from the physiotherapy clinic showed that only 13 (9.8%) patients were actually discharged, 2(1.2%) were being considered for discharge but the discharge pattern for 117 (88.6%) was not recorded.

**Table 1: Age Distribution Pattern of the Acute Flaccid Paralysis Patients (N=132)**

Age Range (Years)	n	%
0 – 2	60	45.5
3 – 5	38	28.8
6 – 8	19	14.4
9 and above	13	9.8
Not recorded	2	1.5

**Discussion**

Neuromuscular diseases of acute onset fundamentally cause acute flaccid paralysis, a common paediatric disorder. It generally presents as an acute or extremely acute motor disorder, which is rapidly progressive. Seven hundred and fifty seven (757) paediatrics

patients out of which 132(17.4 %) were cases of acute flaccid paralysis were managed at the physiotherapy department of the University College Hospital during the study period. The results of this study showed that the 0-2 year age group had the highest prevalence of acute flaccid paralysis, implying vulnerability of this

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group. The result of this study also showed that more males than females suffered from acute flaccid paralysis. This agrees with the study carried out on an appraisal of the Expanded Programme for Immunization in Nigeria [9]. Sciatic nerve palsy was the most common clinical condition causing acute flaccid paralysis. This could be due to the fact that intramuscular injections are usually recommended for children with febrile illnesses [10]. Nerve injury could result from the intramuscular injection arising from the intramuscular injection arising from several

factors including anatomic variations in the course of a nerve and improper technique by the health officer or unqualified people administering the injection. Buttock intramuscular injection risks injury to the sciatic nerve, which leads to lower limb palsy, and most often present as foot drop. This condition rarely results from direct traumatic lesion of the sciatic nerve, but usually from the caustic effect of the injected drug [10].

**Table 2: Distribution of Acute Flaccid Paralysis Cases by Specific Diagnosis (N=132)**

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Diagnosis	n	%
Sciatic Nerve Palsy	95	72.0
Poliomyelitis	26	9.7
Gullian Barre Syndrome	4	3.0
Non Specific Diagnosis	7	5.3

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**Table 3: Time Lag between Onset of Acute Flaccid Paralysis and Date of First Physiotherapy Contact (N=132)**

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Time lag (Months)	n	%
0-6	104	78.9
7 – 12	6	4.5
13 – 18	5	3.8
19 – 24	2	1.5
25 and above	12	9.0
Not Recorded	3	2.3

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The relatively high occurrence of sciatic nerve palsy as a cause of AFP recorded in this study contrasts with a low frequency in studies from other parts of the world [2, 3]. The high

incidence of the sciatic nerve palsy recorded in this study also contrasts with the earlier report by Fatunde and Familusi [11] at the same institution, the University College Hospital

Ibadan. They observed that over a 12-year period, there were 27 patients aged 5 months to 12 years with a diagnosis of sciatic nerve injury due to intramuscular injection. This disparity may be accounted for by the difference in the period of the two studies as well as the fact that patients with AFP including sciatic nerve palsy being managed at the physiotherapy department are sometimes referred to the physiotherapy clinic by paediatricians working in other hospitals outside the University College Hospital, Ibadan.

Poliomyelitis, which was a leading cause of AFP, was recorded to be the second most prevalent AFP case. This may suggest a reduction in cases of paralytic poliomyelitis managed at the physiotherapy clinic, a trend that is in line with the report of the World Health Organisation [12] that the mass immunization initiative for eradication of poliomyelitis has resulted in a significant decline in the number of cases of AFP. However the trend of polio cases during the study period was such that in 1999, only 3 cases of paralytic poliomyelitis were managed compared to the 7 cases in 2004.

It was observed that most of the victims of the AFP studied had completed immunization. Children of the 0-2 year age group are expected to have completed immunization. Non-immunisation of children could be as a result of certain factors such as ignorance on the part of the parents about the dangers of incomplete immunization and non-availability of vaccines. A large number of the patients had no record of immunization, a reflection of poor record keeping practice by the physiotherapists in charge of such cases. The time lag between onset of acute flaccid paralysis and first date of assessment for majority of the patients was within 6 months of injury. This has a clinical implication because the earlier physiotherapy is commenced after diagnosis of AFP, the better the outcome of rehabilitation is likely to be. The clinical features of AFP are varied depending on the disease condition. They include pain, fever, and muscle weakness, paralysis of affected muscles, muscle atrophy, deformity, and gait aberrations.

Early commencement of physiotherapy will have effect on resolution of many of these

clinical features. Only a small percentage (9.8%) of the patients were actually discharged by the physiotherapists and the discharge pattern for 117 (88.6%) was not recorded. This probably shows that the patients absconded or an indictment of poor record keeping at the physiotherapy clinic. The latter suggests a need for better documentation of clinical information by the clinicians. Record keeping should be improved with the use of information technology storage facilities, as this would ensure efficient clinical information management system.

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