SURVEY ON THE MANAGEMENT OF DENGUE INFECTION IN SRI LANKA: OPINIONS OF PHYSICIANS AND PEDIATRICIANS

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Abstract. The management of dengue infection is variable and clinicians often adopt their own methods based on clinical experience. Hence, there is a lack of uniformity in the practice and management of dengue fever (DF) and dengue hemorrhagic fever (DHF) in Sri Lanka. The objectives were to describe the opinions of clinicians regarding certain management issues of, and their clinical experiences in DF/DHF. A self-administered questionnaire survey of 50 consultant physicians and pediatricians that were currently practicing in Government Hospitals was conducted. Their cumulative experience was based on managing approximately 15,119 patients for a period of three years in 15 districts of the island. The WHO guidelines were used by only 16(45%) physicians and 6(40%) pediatricians in the management of DF/DHF. Most of the clinicians did not agree on the value of steroids and antibiotics. However, the majority was in favor of platelet and plasma transfusions, although most had no fixed policy on fluid management. In the experience, clinicians observed the recurrence of dengue, post-viral fatigue syndrome, and many other complications. A conclusion was made that a national policy and guidelines should be created to suit the local context, based on the evidence and experiences of clinicians managing dengue infection.

INTRODUCTION

The prevalence of dengue fever (DF) and dengue hemorrhagic fever (DHF) in Sri Lanka has been recognized since the early eighties, and currently it has become a major health hazard with high morbidity (Vitarana, 1990; Messer *et al*, 2002). Furthermore, cases of DHF in Sri Lanka have dramatically increased since 1989 (Messer *et al*, 2002). In the year 2001, 4,304 cases and 54 deaths were notified, giving a case fatality rate of 1.2% (Ministry of Health, 2002). In 1986, WHO published and have regularly updated guidelines for the management of DHF (WHO, 1998). These guidelines were mainly based on pediatric practice, and dengue is currently increasing among adults. Very often clinicians adopt their own methods of management, based on their clinical experiences. This has led to a lack of uniformity in practice and in the management of DF/DHF. Therefore, there was a need to conduct a survey of clinicians including both physicians and pediatricians to describe their opinions, based on their experiences, concerning certain issues of the management of DF and DHF. This could possibly suggest a basis for more locally appropriate guidelines to standardize the management of these diseases in Sri Lanka.

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MATERIALS AND METHODS

A self-administered, closed questionnaire was posted to 50 clinicians, selected randomly, who were currently practicing at Government Hospitals in January 2003. The responses were collected by July that same year. The questionnaire covered three main areas: 1) approximate number of cases managed by the clinician over the previous three years, 2) experiences with certain clinical features and laboratory investigations, and 3) opinions and practices pertaining to some management issues. The questionnaire included both closed-and open-ended questions. The data were tabulated as percentages.

RESULTS

All 50 clinicians, which included 35 consultant physicians and 15 consultant pediatricians, responded. Their cumulative experiences totaled approximately 15,119 patients over three years

Table 1
Views regarding management of DF/DHF.

Question	Physicians[b]						Pediatricians[c]					
	Yes		No		No response		Yes		No		No response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Is there a place for steroids in management?	9	25	25	71	1	3	1	6	12	80	2	13
Is there a place for platelet transfusion?	31	88	1	3	3	9	9	60	3	20	3	20
Is there a place for plasma transfusion?	27	77	5	14	3	9	12	80	1	7	2	13
Is there a place for antibiotics?	11	31	24	68	0	0	6	40	7	47	2	13
Do you follow WHO guideline in giving fluids?	3	9	12	34	20	57	1	6	2	13	12	80
Do you think WHO guideline[a] is useful?	16	45	3	9	16	45	6	40	2	13	7	46

[a]WHO (1999), [b]No of physicians = 35, [c]No of pediatricians = 15

Table 2
Clinical experiences.

Question	Physicians[a]						Pediatricians[b]					
	Yes		No		No response		Yes		No		No response	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Have you seen recurrence of dengue?	11	31	24	69	0	0	5	33	8	53	2	13
Have you seen DF in a same family simultaneously?	23	65	10	28	2	6	10	66	4	26	1	7
Have you observed post-viral fatigue syndrome in dengue?	27	77	7	20	1	3	7	46	6	40	2	13
Have you observed weight loss in post-dengue period?	7	20	15	42	13	37	1	7	8	53	6	40
Have you observed skin pigmentation in post-dengue period?	5	14	23	65	7	20	3	20	9	60	3	20
Have you seen depression in post-dengue period?	13	37	10	28	12	34	1	7	12	80	2	13

[a]No of physicians = 35, [b]No of pediatricians = 15

from 15 districts of the island. The average number of cases managed by a physician and a pediatrician was 416 and 37, respectively.

Regarding view points on issues such as the value of steroids and antibiotics showed that most of the clinicians (including physicians and pediatricians) disagreed about their usage, however, 25% of physicians used steroids in cases of persistent thrombocytopenia, especially after defervescence and in dengue shock syndrome (DSS) (Table 1). Reasons given for antibiotic use included severe leukopenia, secondary infection, effusions, and prophylactically against secondary bacterial infections. Many physicians were in agreement with platelet transfusion when active bleeding and thrombocytopenia are present together. However, in the absence of active bleeding physicians had diverse opinions on platelet transfusion, and most of them transfused platelets when the count fell below $30x10^9$/l. Recurrence of dengue fever and simultaneous infection within a family have been seen by both physicians and pediatricians as shown in Table 2.

Furthermore, non-tabulated data included responses from both groups of clinicians who had seen more than 25 complications in their patients. The frequencies of some complications are as follows: DSS (60%), DHF (46%), pleural

effusions (26%), encephalopathy (14%), myocarditis (14%), intracranial hemorrhage (6%), ARDS, and acute renal failure.

DISCUSSION

Dengue is a global problem and most of the international literature on dengue infection has been based on pediatric practice. However, we observed recent outbreaks of dengue infection affecting any age group in Sri Lanka. Clinicians including both physicians and pediatricians involve in the management of patients and currently, they adopt diverse management policies based on their own clinical experiences. Also it is understood that pediatric practice is more delicate than that of adults, particularly in the intravenous administration of drugs and fluids. Therefore, this study recognized them as two categories of clinicians in the presentation of data.

The survey has suggested that DF/DHF is common among the adult population in Sri Lanka because physicians had managed a significant number of patients annually. However, sizeable number of children less than 12 years of age is also affected and they were exclusively managed by pediatricians. A publication issued by WHO (1998) has stated that dengue is the most important emerging tropical viral disease in the world today, and a steering committee has published a set of guidelines for the treatment of DF/DHF (WHO, 1999). However, there is doubt about the relevance of these guidelines because of the limited use among both groups of clinicians, especially on issues such as fluid therapy. However, further studies are needed to test this issue, using a more sophisticated methodology.

The majority of clinicians were of the opinion that steroids and antibiotics have no place in the management of DF/DHF, but those who used them provided valid reasons for their usage. However, there is evidence in the literature both for and against the use of hydrocortisone in dengue shock syndrome (Min *et al*, 1975; Sumarmo *et al*, 1982). Therefore, the time has come to test these practices scientifically rather than to use them without evidence. Agreement on certain issues such as plasma transfusion and platelet transfusion seems to be somewhat uniform among the responding clinicians. Experience on recurrence, post-viral fatigue syndrome, and other complications of dengue fever would certainly contribute to the current epidemiological and clinical knowledge about dengue infection which indeed help to modify the management and practice.

Finally, this survey highlighted differences in opinion and practices among clinicians on a common and important medical problem in Sri Lanka. It would seem reasonable, therefore, to suggest that a national policy and a guideline should be made to suit the local context, based on epidemiological evidence, clinical features, and management. However, most of these issues such as value of steroids, antibiotics should be tested scientifically rather than practicing on empirical evidence. It could also be recommended that WHO guideline should accommodate viewpoints of clinicians and the adult population in future.

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