

SHIGELLOSIS AS A CONTINUING CLINICAL PROBLEM IN 1976

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Shigellosis in 1976 continued to be a major clinical problem in the hospitals of the Cholera Research Laboratory (CRL). For the first time (table 1) isolation of shigella exceeded the isolation of cholera by a factor of greater than three. Although this was partly due to the failure of cholera to break out in big epidemic, the importance of shigellosis as a continuing challenge should not be underestimated. Table 1 also shows the importance of shigellosis as a cause of death in CRL where 30% of all deaths were associated with a positive diagnosis of shigellosis. Figure 1 shows the monthly trend of admission from different serotypes of shigellosis in both 1975 and 1976. The most interesting departure from the last year was the continuing increase of admission due to *S. flexneri* and a decrease for *S. dysenteriae* 1 from a peak in April. Table 2 shows the breakdown of isolation of the shigella serotypes. The overall ratio between *S. flexneri* and *S. dysenteriae* 1 seem to be the same as in 1975. The pattern of mortality were also similar. Malnutrition associated with *S. flexneri* was the most important factor contributing to the higher mortality in this serotype. Table 3 shows the breakdown by age in the admission and mortality pattern of all shigellosis. It is clear that mortality was highest in the youngest age group, particularly in those below 5 years of age where the rates of admission were also the highest. Leukemoid reactions as shown in table 4 continues to plague us suggesting that the severity has not decreased among the admitted cases. *S. dysenteriae* 1 continues to be the major contributor for the leukemoid reaction.

PROBABLE PATHOGENESIS OF HAEMOLYTIC AND HAEMOLYTIC-
UREMIC SYNDROME IN SEVERE SHIGELLOSIS

1. EXTENSIVE AND SEVERE ULCERATION IN THE COLON.
2. HIGH LEUCOCYTOSIS IN RESPONSE TO THE INFLAMATION -
RESULTING IN LEUKEMOID REACTION IN SOME CASES.
3. SEVERE TENESMUS GIVING RISE TO INCREASED POSITIVE
PRESSURE IN THE COLON.
4. BACTEREMIA AND/OR ENDOTOXEMIA THROUGH THE ULCERATED
AREAS CAUSING "PRIMING" OF THE SUBJECTS.
5. FURTHER BACTEREMIA AND/OR ENDOTOXEMIA CAUSES
SCHWARTZMAN TYPE REACTION BY DEPOSITION OF FIBRIN ON
THE MICROVASCULATURE.
6. FIBRIN DEPOSITS CAUSE MICROANGIOPATHIC - HAEMOLYTIC
ANAEMIA.
7. EXTENSIVE INVOLVEMENT OF KIDNEYS BY DEPOSITS CAUSE
HAEMOLYTIC-UREMIC SYNDROME.

TABLE 1

ADMISSION AND DEATHS IN CRL, 1976

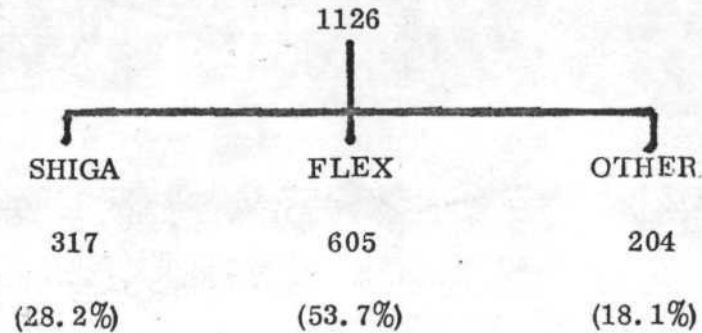
Admission		
6785		
Shigellosis	Cholera	Other
1126	358	5301
(17%)	(5%)	(78%)
Deaths		
225 (3.3% of total admission)		
Shigellosis	Cholera	Other
67	2	156
(30%)	(0.9%)	(69%)

* A substantial proportion had symptoms of dysentery not confirmed by bacteriology.

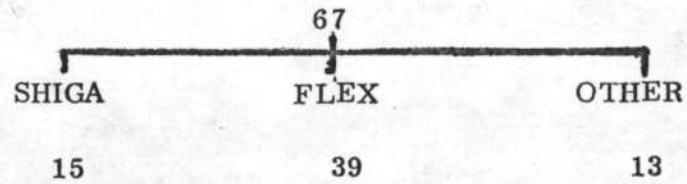
TABLE 2

ADMISSION AND DEATHS STATISTICS IN SHIGELLOSIS - 1976

TOTAL SHIGELLA ADMISSION



DEATH



% of total death	(22.4%)	58.2%	19.4%
% of total respective serotype	4.7%	6.5%	6.4%
% of total shigella admission	1.3%	3.5%	1.2%

TABLE 3

ADMISSION AND DEATHS IN SHIGELLOSIS ACCORDING
TO AGES IN HOSPITALIZED PATIENTS IN 1976

Age group	F L E X N E R I			S H I G A			O T H E R		
	Total Cases	Death	%	Total Case	Death	%	Total Case	Death	%
< 1	122	13	11	22	3	14	36	2	6
1 - 2	145	14	10	60	6	10	37	4	11
3 - 5	116	10	9	87	4	6	37	5	14
6 -10	48	1	2	43	1	2	28	2	7
11 -19	25	-	-	38	-	-	12	-	-
20+	150	1	1	67	1	1	53	-	-
All ages	606	39	6	317	15	5	203	13	6

TABLE 34

LEUKEMOID CASES IN SHIGELLOSIS IN CRL, 1976

77 (6.8 of total Shigella Admission)		
Shiga	Flex	Others
1 (79.2)	14 (18.1)	2 (2.6)
9.2 of total shiga admission)	(2.3 of total flex admission)	(1% of total other shigella admission)

DEATH

20 (25.9 of total leukemoid in shigella) (29.8% of total death in shigella)		
Shiga	Flex	Others
13 (65%)	6 (30%)	1 (5%)
6.7% of total death in shiga)	(15.4% of total death in flex)	(7.7% of total death in other shigella)
0.1% of total shiga admission)	(1% of total flex admission)	(0.5% of total other shigella admission)

DISTRIBUTION OF LEUKEMOID CASES (1976), ACCORDING TO AGE AND SEROTYPE

Age Group	F L E X N E R I			S H I G A			O T H E R		
	Total case	Leukemoid	%	Total case	Leukemoid	%	Total case	Leukemoid	%
< 1	122	3	2	22	8	36	36	1	3
1 - 2	145	4	3	60	22	37	37	-	-
3 - 5	116	5	4	87	19	22	37	-	-
6 - 10	48	2	4	43	9	21	28	1	4
11 - 19	25	-	-	38	1	3	12	-	-
20 ⁺	150	-	-	67	2	3	53	-	-
All ages	606	14	2	317	61	19	203	2	1

DISTRIBUTION OF LEUKEMOID CASES (1976)

ACCORDING TO AGE AND SEROTYPE

Age group	Flexneri	Shiga	Other	Cholera	Bacteriologically negative	Total	%
<1	3	8	1	1	15	28	23
1 - 2	5	23	-	-	9	37	31
3 - 5	5	20	-	2	4	31	26
6 -10	2	9	1	-	2	14	12
11 -19	-	1	-	-	2	3	2
20 +	-	2	-	1	5	8	7
All ages	15	63	2	4	37	121	100