

10293

Sulfanilamide in Treatment of Experimental *Shigella dysenteriae* (Shiga) Infections of Rabbits.

JOHN A. KOLMER AND ANNA M. RULE.

From the Research Institute of Cutaneous Medicine, Philadelphia, Pa.

Shigella dysenteriae (Shiga) was cultivated on blood agar for 24 hours and suspended in sterile saline solution to give approximately 2000 million per cc. Six rabbits were inoculated intravenously with amounts varying from 0.05 cc (100 million) to 0.4 cc (800 million) per kilo of weight with the results shown in Table I.

TABLE I.
Virulence of *Shigella dysenteriae* (Shiga) for Rabbits by Intravenous Inoculation.

No.	Dose suspension* per kilo (cc)	Equivalent in <i>Shigella</i>	Results in days				
			1	2	3	4	5
1	.05	100 million	—†	—	—	—	—
2	.1	200 "	—	—	—	D	—
3	.15	300 "	—	D			
4	.2	400 "	—	D			
5	.3	600 "	D				
6	.4	800 "	D				

*Suspension prepared of *Shigella dysenteriae* (Shiga) suspended in saline solution from 24-hour blood agar cultures carrying 2000 million per cc.

† — = lived; D = died.

0.15 cc per kilo (300 million) proved fatal in about 40 to 48 hours.

Eighteen rabbits varying in weight from 1850 to 2380 g were inoculated intravenously with 0.15 cc suspension (300 million) per kilo of weight; 5 were untreated controls, all of which succumbed in 24 to 72 hours.

The remaining 13 were given sulfanilamide orally, subcutaneously and intravenously in the daily dosage per kilo (divided into 2 doses per day given 6 hours apart) shown in Table II for a total of 3 to 4 doses. The first dose was given 2 hours after intravenous inoculation with *Shigella dysenteriae* (Shiga). All of the animals succumbed in 2 to 3 days after inoculation.

Three additional animals were used as drug controls; one received 0.5 g sulfanilamide orally per kilo per 24 hours, divided into 2 doses 6 hours apart, for 5 days (10 doses); one received 0.5 g per kilo subcutaneously and one 0.2 g per kilo intravenously, each being divided into 2 doses given 6 hours apart daily for 5 days (10 doses); all survived.

TABLE II.
Sulfanilamide in Treatment of Experimental *Shigella dysenteriae* (Shiga) Infections of Rabbits.*

No.	Dose per kilo† (g)	Route of admin.	No. of doses	Results in days				
				1	2	3	4	5
1	.1	Orally	4	—†	—	D		
2	.2	"	3	—	D			
3	.5	"	4	—	—	D		
4	.2	Subcut.	3	—	D			
5	.2	"	3	—	D			
6	.2	"	3	—	D			
7	.5	"	4	—	—	D		
8	.5	"	3	—	D			
9	.5	"	3	—	D			
10	.1	Intraven.	4	—	—	D		
11	.1	"	4	—	—	D		
12	.2	"	4	—	—	D		
13	.2	"	3	—	D			
14	Control	—	—	D				
15	"	—	—	—	D			
16	"	—	—	—	—	D		
17	"	—	—	—	D			
18	"	—	—	—	D			
19	.5	Orally control	10	—	—	—	—	—
20	.5	Subcutan. control	10	—	—	—	—	—
21	.2	Intraven. "	10	—	—	—	—	—

*Inoculated intravenously with approximately 300 million per kilo.

†Divided into 2 doses daily given 6 hours apart; first dose given 2 hours after inoculation.

— = lived; D = died.

Conclusion. Sulfanilamide by oral, subcutaneous, and intravenous administration was ineffective in the treatment of rabbits inoculated intravenously with virulent *Shigella dysenteriae* (Shiga) in dose of 300 million per kilo, fatal in 24 to 72 hours in untreated controls.