PROPHYLAXIS OF RESPIRATORY TRACT INFECTIONS WITH SULPHANILAMIDE LOZENGES

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Percy Garson (1943) claimed that a significant decrease in the incidence of infections of the upper respiratory tract could be effected by the administration of small amounts of sulph-anilamide in lozenges. In view of its possible value in the Army, it was decided to investigate this method of prophylaxis on a larger scale than Garson had found possible. Messrs. Boots Pure Drug Co. Ltd. kindly supplied two types of lozenges. One (yellow) consisted of 2 g. of lozenge basis, and the other (red) of the same weight of basis in which was incorporated 0.065 g. of sulph-anilamide.

Individuals vary greatly in the time for which a lozenge could be made to last, the average being about 20 minutes. An estimate of the concentration of sulph-anilamide in the saliva of a subject sucking a red lozenge which lasted for 20 minutes was made by pooling four samples of saliva ejected at 5-minute intervals. The concentration of sulph-anilamide was found to be 300 mg. per 100 c.cm. of saliva. This might be expected to have considerable local action, but it is improbable that the dose (0.325 g.) swallowed in 24 hours could have any general action.

The population used in the investigation consisted of 1,200 recruits receiving instruction in a primary training centre (P.T.C.). These men had within a few weeks been transferred from civil to Army life, and experience has shown that infections of the respiratory tract very often occur soon after exposure to the communal existence of the Army. The recruit normally spends six weeks in the P.T.C., and while there belongs to one of three companies—A, B, or C. At the beginning of his training he is allocated to one of the six barrack-rooms which accommodate the personnel of each company. The investigation dealt with five groups of men, each from a separate intake, and, to secure uniformity, each company was included at least once and the investigation covered various stages of the six-weeks training period. The men in each barrack-room were divided into two sections, to one of which red (sulphanilamide) and to the other yellow (control) lozenges were administered for a period of 16 days. Table I gives the essential facts about the composition of the population investigated.

TABLE I

Group	Com-pany	Month	Week of Training in which Investigation Began	Number of Men on Each Type of Lozenge			
				1-9 Days		10-16 Days	
				Sulpha	Control	Sulpha	Control
1	A	March	Fifth	103	103	89	85
2	C	April	Third	136	139	120	126
3	B	May	"	119	124	96	107
4	A	June	"	119	114	114	115
5	C	June	First	105	131	107	121
Totals ..				582	611	526	554

Total numbers { Sulphanilamide .. 1,108 } 2,273
 { Control 1,165 }

Lozenges were distributed by an N.C.O. at 06.30, 11.00, 13.30, 17.00, and 20.30 hours daily for 16 days. The men were instructed to begin to suck the lozenges immediately they were received, to make them last as long as possible, and to swallow their saliva while they remained in the mouth. The medical officer (A. F. H.) who was completely in control of the collection of data did not know, until the investigation had been concluded, which type of lozenge contained sulph-anilamide. The men knew nothing of the composition of the lozenges.

On the ninth and again on the sixteenth day after administration of lozenges had started, the company was assembled

and divided into two groups—red and yellow. Only men who had regularly taken lozenges during the preceding 9 or 7 days and were present on parade on the appropriate day were included in the investigation. Owing to postings, absences, defaulters, etc., not every man included in the first period was included in the second, but the great majority were. A very few men included in the second period had not been included in the first because they had been absent from the first parade.

The information abstracted in Table II was derived from the answers given by the men to carefully designed questions. It represents, therefore, the opinions of the men concerned on their symptoms.

Table III gives details of the illnesses of the men who reported sick with signs or symptoms of respiratory tract infections during a period of 14 days starting two days after administration of lozenges had begun. Apart from temperatures and the results of auscultation, the data were supplied by the men themselves in response to carefully designed questions.

TABLE II.—Symptoms Reported at End of 9 and of 16 Days

	Red (Sulphanilamide Group)	Yellow (Control Group)
Number of men in group ..	1,108	1,165
Slight cough	585	493
Severe	70	121
Nose blocked	228	249
" running	303	342
Painful to speak	95	92
" swallow	70	71
Malaise	81	91
Fresh or increasing cold during previous 7 days ..	237	351
Without cold	398	396

TABLE III.—Men Reporting Sick during Last 14 Days of Administration of Lozenges

	Red (Sulphanilamide Group)	Yellow (Control Group)
Average strength	555	534
Number reported sick	60	66
Temperature over 99°	10	6
Rhonchi at one or both bases ..	6	4
Cough	55	55
Headache severe	6	6
" moderate	7	14
" slight	3	6
Nose blocked	26	24
" running	21	31
Malaise	13	12
Painful to speak	23	21
" swallow	21	30
Duration of cold before reporting sick:		
0-7 days	51	52
8-14 days	8	11

Discussion

The only figures showing statistically significant differences in the two groups (Table II) are those for coughs (slight and severe) and for fresh or increasing colds during the previous 7 days. If we are prepared to place complete reliance on statistical theory, we are forced to believe that the administration of sulph-anilamide in the form of lozenges reduces the incidence of severe coughs and of fresh or increasing colds, but we are equally forced to believe that it increases the incidence of slight coughs.

We prefer—as we believe most of our readers will—to conclude that the protection against infections of the respiratory tract afforded by sulph-anilamide lozenges, if indeed there is any such protection, is so trifling as to make the method of prophylaxis not worth the trouble, expense, and slight risk involved.

REFERENCE

Garson, P. (1943). *British Medical Journal*, 2, 452.

H. F. Fernandes (*Tubercle*, 1944, 25, 82) records six illustrative cases of bilateral tuberculous effusion (five of them fatal) in patients aged from 15 to 37 which occurred among 2,012 admissions to the Derbyshire Sanatorium during the period 1938 to 1944. Five showed radiological evidence of miliary tubercle during the final stage of fluid resolution, and one developed a tuberculous spine some time afterwards.