A CASE OF WEIL'S DISEASE TREATED WITH PENICILLIN

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The following report of a case of Weil's disease which seemed to respond to treatment with penicillin may be of interest.

Case History

On the first day of the illness the patient, an Italian male aged 26, complained of feeling hot and of a pain in the right side of the chest. On the second day a slight cough developed, and he was admitted to hospital on the third day. Examination revealed the following: T. 102°, P. 112; skin hot and dry; a few fine crepitations at both bases; other systems normal. Radiographs showed some opacity at the left base. A tentative diagnosis of pneumonia was made and therapy with sulphamezathine begun.

On the fifth day of the illness the patient's condition was not improved; the fever continued, and the radiologist reported that the films already taken suggested atypical pneumonia. In view of this the sulphamezathine was discontinued. On the sixth day the patient became slightly jaundiced; pale stools and bile pigments in the urine were also reported. The liver was slightly enlarged and tender. Conjunctivitis was present. An interpreter elicited that the patient had worked in ditches and canals. A low-fat high-protein

some time. It can, however, be regarded as at least very possible that the penicillin was responsible for the destruction of the organisms in this instance, and, if this be assumed, the following conclusions may be drawn from the case:

1. In view of the small dosage at relatively long intervals, it would appear that the organism can be eliminated rapidly and easily, being relatively susceptible, as suggested by experimental work in animals.

2. That the diagnosis must be established at the earliest possible moment, and penicillin administered. From a study of this case it will be seen that recovery had begun before the organisms could be found in the urine. In this connexion the great value of an early increased white cell count with relative and absolute granulocytosis is again deserving of emphasis. It may well prove that in view of the difficulty of establishing the diagnosis completely until relatively late in the disease—save for those cases in which the organisms may be demonstrated in the blood in the early stage by dark-ground illumination (though unfortunately this is not always successful)—a case suspected of being Weil's disease, with a typical white cell count, should have penicillin immediately when ample supplies become available.

3. The penicillin did not appear to hasten recovery in any way, the jaundice diminishing no more rapidly, and remaining until the 42nd day. In a case in which recovery is already taking place spontaneously this might be anticipated, since

Day of Illness	White Cell Count	Icteric Index Units	Agglutination of Formolized Culture of <i>L. icterohaemorrhagiae</i> (Human Strain) with Patient's Serum	Presence of <i>Leptospira</i> in Alkaline Urine of Patient	Penicillin Administration
6th	Total, 14,000: neutrophils, 13,440 (96%), lymphocytes, 560 (4%)	55 110	$\frac{1}{10} \pm \frac{1}{30}$ trace	None seen " "	
7th	Total, 14,000: neutrophils, 76%, lymphocytes, 19%, eosinophils, 3%				
10th					
13th					
16th	Total, 12,000: neutrophils, 78%, lymphocytes, 22%	36	$\frac{1}{10} + \frac{1}{30} + \frac{1}{100} \pm \frac{1}{300}$ trace	" "	
17th					
18th					
19th					
22nd	Total, 10,000: neutrophils, 64%, lymphocytes, 35%	24	$\frac{1}{10} + \frac{1}{30} + \frac{1}{100} + \frac{1}{300} + \frac{1}{1000} + \frac{1}{3000}$ trace	" "	
23rd					
28th					
29th					
30th		15		Numerous organisms of <i>L. icterohaemorrhagiae</i> seen Scanty organisms Leptospira still present Very scanty organisms seen No organisms seen " "	Penicillin 15,000 units every 4 hours started at 6 a.m. Penicillin continued " " Penicillin discontinued. Total given, 315,000 units
31st					
32nd					
33rd					
35th	Total 8,000			" "	
41st				" "	

high-carbohydrate diet was ordered, with additional vitamins and a saline purge each morning. Precautionary measures were instituted.

On the seventh day the jaundice was more pronounced and the temperature still raised (100.2° F.); the patient was rather drowsy, and for the first time his condition gave rise to some anxiety. By the ninth day his general condition had begun to improve, and by the 20th day the temperature was normal, with the jaundice markedly improved. At no time during the illness did the patient show any haemorrhagic tendency.

The laboratory investigations together with details of penicillin administration are set out chronologically in the accompanying Table.

Conclusions

Unfortunately this case cannot be regarded as proof that the penicillin was responsible for the disappearance of the organisms from the urine, since they tend to disappear spontaneously in the natural course of the disease, though they may remain present in the urine for as long as 40 days. Indeed, to offer complete proof that penicillin will destroy the leptospira *in vivo* a series of cases will have to be treated, and in view of the comparative rarity of the disease this may take

obviously the damaged liver will take some time to resolve. It suggests, however, that, if spontaneous recovery is already occurring, penicillin may not benefit the course of the disease, its value at this stage being to render the patient free from the risk of infecting others earlier than might otherwise be the case, and in preventing a relapse—sometimes spoken of as "after-fever"—which is said to occur in from 25 to 40% of cases during the convalescent period.

The Bristol Hospitals Fund has issued its fifth annual report. In 1941 the hospitals decided to use the Fund as a collecting agency for all employers' contributions formerly sent to the individual hospitals direct. The Fund's total revenue in 1943 was £56,411, an increase of £8,017 over 1942. In an epilogue the report states: "The failure of the Government in the White Paper on a National Health Service published on Feb. 17, 1944, and its failure in the subsequent Parliamentary debates, to give any certain indication of the retention of the contributory scheme organization in the proposed new National Health Service, or to allay the fears of the voluntary hospitals as to their future chances of survival in a vast bureaucratic structure, is disquieting and calls for deep and earnest thought."