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# TYPHOID FEVER, WITH SPECIAL REFERENCE TO TREATMENT BY ANTISEPTICS.

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# TYPHOID FEVER, WITH SPECIAL REFERENCE TO TREATMENT BY ANTISEPTICS.\*

BY ADOLPH KÖENIG, M. D., PITTSBURGH.

To bring before this Society a subject so time-worn as that of typhoid fever might, at first sight, appear a waste of valuable time. To justify myself, I have had recourse to the vital statistics of the cities of Pittsburgh and Allegheny, and am, consequently, in a position to present the following data: The estimated population of the two cities for 1893 is 380,000, of which a little over two-thirds should be apportioned to the former, and a little less than one-third to the latter city. During the twelve months, beginning with January and ending with December, 1893, 2,146 cases of typhoid fever were reported in Pittsburgh. Of these, 312 proved fatal. During twelve months, beginning March, 1893, and ending with February, 1894, 1,476 cases, with 161 deaths, were reported in Allegheny. When we consider that persons attacked with this disease are, as a rule, in the prime of life, endowed with strong powers of resistance against ordinary causes of premature death, the need of more light on this subject becomes obvious.

The one method of combating this disease is doubtless to be sought in prevention; and that may be accomplished with almost absolute certainty through an uncontaminated supply of drinking water, as has been abundantly proven in a number of European cities. In a comparatively new country, such as ours, where municipal governments lose sight of the common good in the struggle for personal gain and ambition, scientific sanitary measures will, for years to come, be a secondary consideration, and we, as physicians, are called upon to apply our reme-

lies and prevent, as much as possible, the growth and lethal action of the bacillus typhosus after it has found lodgment in its human host.

That the disease depends on a specific germ can no longer be denied, though its presence may often be difficult to establish. In order to arrive at legitimate conclusions concerning treatment, the life-history of the bacillus should be studied. The causes that exert favorable and unfavorable influences upon the life of the parasite must be investigated, and the facts taken as a basis of treatment when infection is established. The pathological changes that take place in typical cases in the intestines are first a general congestion of the mucous membrane and mesenteric glands, followed by a marrow-like infiltration of the intestinal glands and surrounding tissue. At about the middle of the second week necrosis of patches of mucous membrane and Peyer's glands results. A period of about a week then elapses, during which the dead tissue becomes separated from the living, leaving ulcers of variable size and depth. We thus have, for a period of from two to three weeks, what is equivalent to a traumatic condition of the intestinal canal. As it is impossible to apply aseptic treatment in the healing of these wounds, the best procedure that would suggest itself is to render the intestinal tract as uninhabitable for micro-organisms as it is possible to do with antiseptics. Where is the surgeon who at this day dares ignore asepsis and antisepsis in an amputation of a leg or thigh? No member of this Society, in practice for fifteen years, but who remembers the typhoid condition due to toxicogenic bac-

\*Read by title at the meeting of the Medical Society of Pennsylvania, held in Philadelphia, May, 1894.



teria, of probably one-half of the cases of amputation, two or three weeks after operation, before asepsis and antisepsis were properly carried out. The activity and life of the bacillus typhosus within the human body apparently terminates at about the end of the second week of the disease, after the initial symptoms have appeared, and it is doubtless true that the later manifestations characteristic of typhoid fever are due to putrefactive bacteria, and especially to the bacillus coli communis, which is known to assume extraordinary virulence in the latter stages of this disease. The treatment, therefore, that is indicated, contrary to the statements found in most recent text-books, is one that inhibits the growth of intestinal micro-organisms. It may, perhaps, be asserted that remedies ingested for that purpose are absorbed before the seat of disease in the small intestines is reached; but when it is remembered that the digestive processes are practically abolished, and absorption interfered with, it is not unreasonable to suppose that much of the ingested material reaches the lesions, besides the clinical history of cases so treated amply proves the antifermentative action of antiseptics in the intestines.

With these facts in mind I began, several years ago, the use of antiseptic remedies in the treatment of typhoid fever.

Creosote was first chosen as the remedy, but as it is often difficult to obtain a good article of this drug, and as it possesses a stronger and more disagreeable empyreumatic odor than guaiacol, it was soon displaced by the latter, the main and most valuable constituent of creosote.

During the year 1893 thirty-three cases of typhoid fever were treated by me with this remedy. In no case was there intestinal hemorrhage, and none died. I am aware of the fact that upon this number of cases no absolute conclusions can be based; but it is nevertheless true, that the epidemic during which they occurred was not wanting in virulency as the 473 fatal cases, a percent of thirteen and a fraction, of the entire number reported, indicates.

The method pursued in administering the remedy was according to the following prescription:

R Guaiacolis..... f ʒii.  
Glyceriui..... f ʒii.  
Alcoholis..... f ʒiv.

M. Sig. Five drops in whisky and water every two hours.

It was my custom to vary the dose of the remedy according to the age of the patient, or according to the tolerance manifested toward the drug. Occasionally not more than two drops were given, while not infrequently six drops was the dose. To insure perfect solution in the water with which it was given, it was directed that a teaspoonful of whisky be placed in a small drinking glass; into this the guaiacol was dropped, and from two to four tablespoonfuls of water added. In about three cases the drug was not well borne; in one it was necessary to discontinue its use entirely. This case—one of four in the same family—was strong evidence, to my mind, of the value of the guaiacol. While the three other members of the family attacked with the fever, were practically well after the fourth week, the one in whom the remedy produced gastric disturbances necessitating its discontinuance, passed through a six weeks course, and was even then in a more than ordinarily debilitated condition for a month or two.

In addition to the guaiacol, I as a rule, administered small doses of calomel, one-twentieth to one-tenth of a grain, three or four times a day until a slight purgative action was induced, when it was discontinued for the time being. During the latter part of the disease when constipation is the rule the same remedy was again employed, and always with excellent result. One teaspoonful of whisky was given with every dose of medicine, and when the vital forces became weakened larger amounts were resorted to.

High temperature was controlled by frequent cold sponging. One case treated in Allegheny General Hospital, received antipyretics of the coal-tar class from the resident physician. The antipyretic action of this drug was very prompt and decided, but was followed by a condition of great pros-

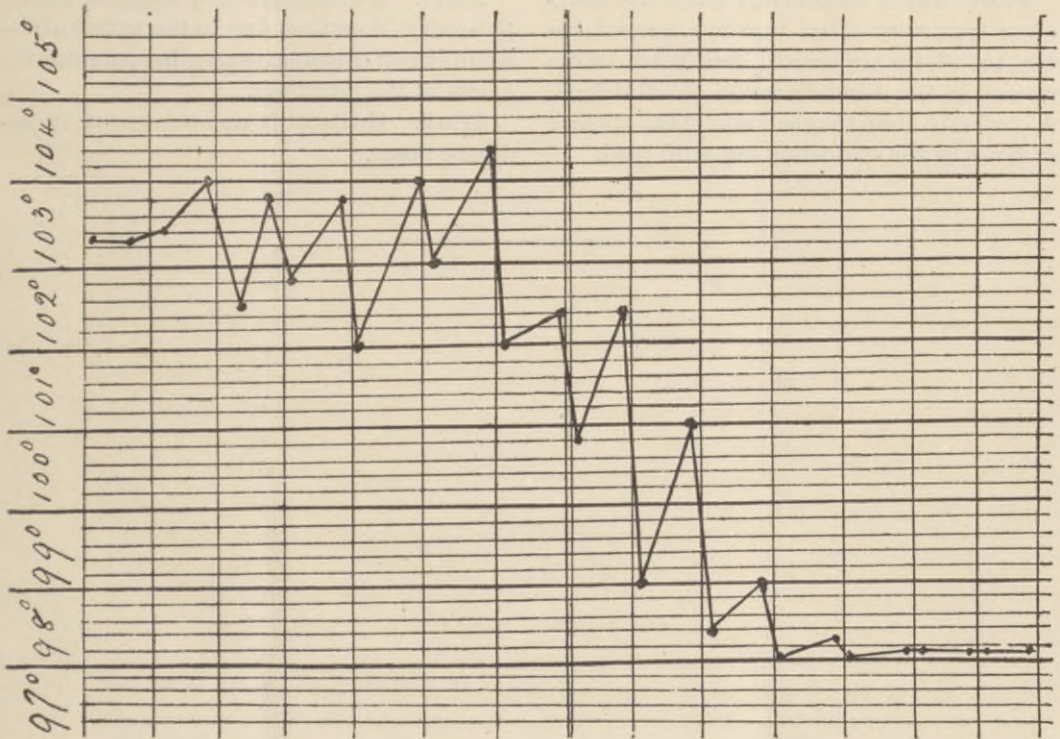


tration, bordering on collapse. After this experience the temperature was reduced by sponging, which calmed and quieted the patient at the same time that the fever was reduced, and without prostration.

The diet was liquid and consisted of meat broths, beef-tea and milk, the latter usually diluted by one-half with barley water. During the height of the disease when no desire for food was manifested, very little nourishment was given. Under this antiseptic treatment the time to begin the administra-

and the greater difficulty experienced in keeping such intestinal contents in an aseptic condition. I am of the opinion that the name of the celebrated Englishman who desired the inscription, "He fed fevers," as an epitaph, should have been joined to that inscription by the word *and*, provided he included typhoid fever in his list.

In illustrating the typical course through which the majority of the patients passed, I will present the temperature record of Mr. G. M., aged twenty-four, who came



TEMPERATURE RECORD OF G. M. DURING THE SECOND AND THIRD WEEK OF THE DISEASE.

tion of solid food becomes a matter of great importance. The observation was made a number of times that when the temperature dropped to the normal point, during the latter part of the third week, though the tongue still remained coated, if solid food was given a relapse, indicated by a return of the morning and evening elevation of temperature, occurred. This can doubtless be referred to the disturbing influence that solid matter, in considerable amounts, would exert while passing over the unhealed ulcers

under my observation and treatment about the beginning of the second week of the attack. For the first week after treatment was begun, he had three or four loose passages each day, and therefore no calomel was given.

The result of these cases treated after this plan during the past year warrant me in believing the following conclusions justified:

First. The antiseptic treatment is the rational treatment of typhoid fever.

Second. Under its use the course of the



disease is greatly modified; typanitis is prevented; the tongue remains moist throughout; delirium is rare and the intestinal tract is placed in the best possible condition for the healing of wounds.

Third. Small quantities of alcohol often repeated sustain the vital forces better, during the height of the fever, than albuminous or starchy food.

Fourth. In private practice cold sponging is the best antipyretic and nerve sedative.

Fifth. As the temperature under this method of treatment often becomes normal before the ulcers are healed, care must be observed in the administration of solid food. A perfectly clean tongue, rather than absence of fever, is the indication for solid food.

Sixth. The cost of the medicine and whisky used during the entire course of the disease rarely exceeds five dollars, which is a factor of no little importance with many patients.

Seventh. Guaiacol exerts no disturbing influences on any organ, except in rare cases when a very irritable stomach may reject it.

Eighth. It should be given day and night, and in the form of the prescription before mentioned, may be gradually increased to seven or eight drops every second hour.

Ninth. Guaiacol prevents the later toxine poisoning, doubtless due to the action of the bacillus coli communis and other putrefactive germs in the intestines.

Tenth. Guaiacol is non-poisonous in ordinary doses.

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