

Thesis:

On the use of the Cold Wet Pack

in the treatment of

Typhoid Fever, and other febrile diseases.

by

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On the use of the Cold Wet Pack in the treatment of Typhoid Fever, & other febrile diseases.

The treatment of continued fever by the outward application of cold dates from a very early period in the history of Medicine. From the days of Hippocrates attempts have been made at various times to moderate and control the pyrexia of most febrile diseases by the use of cold, in the form of cold affusion, cold baths, cold sponging & the like. It was not, however, till the year 1799 that this method of treatment was, so to speak, systematized. In that year Dr. James Currie began to treat systematically by cold affusion, and occasionally by cold baths, most febrile diseases, especially typhus, typhoid & scarlatina, his object being not only

to control the pyrexia, by preventing it from rising, but also if possible to abort, or, as he phrased it, to "extinguish" the disease.

Not to enter minutely into details, it may be said that, though Currie's method was adopted by many physicians both in this country & abroad, including Gregory, Giannini, Chomel, Graves, Brousseau, Armitage, and Priesnitz, the empiric, it gradually fell into disfavor & desuetude. It has been revived, however, of late years, by Brand of Stettin, & is now adopted, with some modifications, by most of the leading physicians on the Continent, as Ziemssen, Jürgensen & Liebermeister, by Austin Flint & Codes of America, & by Coupland, Cayley, Broadbent, Sarsen, Wilson Fox, Thoroughgood & others in this country.

The advocates of the antipyretic

treatment of fever by cold applications insist, & insist rightly, that this method is not intended only or even chiefly for cases of hyperpyrexia, but is applicable to most cases of continued fever, in which the temperature reaches 103°F. They point in justification to the fact that the action of continued pyrexia has a decidedly injurious effect on all the tissues of the body. Though it is undoubtedly to a great extent a result of the active disintegration that is going on in the system, it is itself most pernicious by promoting disintegration, inducing degeneration of all the tissues, and leading to the accumulation in the blood of a large quantity of histolytic products. The effect of these changes in the blood and tissues is soon seen in the appearance of the patient, in his gradual emaciation, muscular weariness, & loss of strength, and in his rapidly passing into what is

* See "British Medical Journal" 1/3/84 p. 413

called the typhoid state. Now the object of the antipyretic treatment by cold is, not so much to combat hyperpyrexia when such occurs, but, by commencing the treatment as early as possible in the disease, to prevent the temperature from rising above a very moderate height throughout its whole course, & as the late Dr. Mahomed put it, "to check the formation of the habit of high temperature." Accordingly it is very desirable not to wait till the habit of high temperature has been formed, & symptoms of failure of the heart's action have occurred, but from the outset of the disease to keep down the temperature, & thus obviate the supervention of these symptoms.

The various modes of applying cold are these: — cold affusion, the cold bath, the graduated bath, the cold pack, cold compresses, & cold sponging. Most authorities on the subject, as Brand, Liebermeister,

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Gayley and Coupland, seem to prefer the cold bath, & speak of it as by far the most efficient form in which to apply cold. I agree, however, with those Physicians, as Austin Flint and Wilson Fox, who give the preference to the cold wet pack. My experience of cases of hyperpyrexia has been considerable, & has convinced me that in the cold wet pack we have an agent of great power & utility, & quite as efficient as the cold bath.

The advantages of the cold pack over the cold bath are these: — it obviates the necessity of taking the patient from his bed, & therefore it can be employed without any inconvenience to him, & without the physical discomfort & disturbance involved in the use of the cold bath. This is a point of the utmost importance, especially in typhoid fever, where as little movement of the patient as possible is desirable, & where even

the most careful movements are very trying to his strength, especially when severe diarrhoea is present. The cold pack can be applied without the exposure incidental to the use of a bath, & without the fatigue due to being lifted into & out of the bath, & being dried before returning to bed.

While it is being used, the patient is under no temptation to put forth any exertion, whereas, when the cold bath is used, it is very difficult indeed to prevent him from attempting to exert himself. Moreover, the cold pack is quite practicable in the private houses of the middle classes, & even in the humblest household, for the materials are always ready to hand, & can be used without assistance by an ordinary attendant. The temperature, as it falls, is more easily watched, & its reduction more accurately gauged.

§ American Medical News 7/1/82 p. 2.

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when the cold pack is employed, than when the patient is immersed in a cold bath. As Flint remarks, § "it can be better regulated as regards the degree of cold, the duration of its employment, etc.: it is less likely to prove hurtful, & it may be made equally efficient."

Lastly, the cold pack is generally speaking, comparatively pleasant to the patient, so that, as I have frequently observed, he speaks gratefully of the comfort resulting from its use, and, as soon as the fever-heat renders him again uncomfortable, begs that it may be reapplied. The cold bath, on the other hand, is both troublesome & disagreeable to the patient, & often the very proposal to employ it alarms both himself & his friends.

As to the other modes of applying cold, none of them is so generally applicable, & at the same time so effectual, as the cold pack. The mode in which the pack is applied

§ *Lucas's Dictionary of Medicine. Vol. I. P. 243*

+ *American Medical News. 7/1/82. P. 2.*

* *Flint's Clinical Medicine. P. 694*

Bartholow's Therapeutics 4th ed. P. 61.

may be described in the words of [§]Therowood: - "the patient is wrapped in a wet sheet, & then covered with a few blankets. The sheet, as it becomes heated, may be changed for one fresh & cold, or very cold water may be squeezed from a sponge over the sheet, as the patient lies rolled up in it on a water-proof cloth." Plink suggests* that a watering pot should be employed for the purpose of sprinkling with water, & that the sprinkling should be repeated at intervals of a few moments until the temperature is reduced to 102° F or lower. "This method* is to be repeated as often as the temperature rises to 103°. As good results may be obtained by it as by the cold bath" "The patient* may be put into the wet pack several times each day, according to the state of the temperature, & may remain in it from five minutes to an hour," until the temperature is reduced.

§ *British Medical Journal*. 1/3/84 p. 423

* *locus citato*.

When the case requires it, the water may be used ice-cold.

As regards the rules to be followed in using the cold wet pack, these will be noticed when the treatment of the different febrile diseases is being discussed.

The objections, which have been urged against the use of cold externally in typhoid fever & other ^{febrile} diseases, are numerous. It was said lately by Dr. Samuel West, in the discussion on the cold-bath treatment of typhoid fever in the Medical Society of London, that the treatment by cold is based upon a one-sided view of the process of fever. A better answer to this criticism cannot be found than in the words of a leader in the "British Medical Journal": viz,* that 'the same may be said of any or every treatment for almost any disease. Mercury hits syphilis, when the marksman has but

§ l.c.

* Affleck. *British Medical Journal*. 17/5/24 p. 945-6

a very fractional view of the bull's eye. It has also been said § that the success of the treatment depends on the clinical skill with which it is applied, as if the success of the treatment of any disease did not depend on clinical skill. Again* it has been said that, as far as typhoid fever is concerned, the treatment "has a depressing effect on the circulation, which renders it unsuitable in a large number of severe cases." Now I contend that a continuous high temperature, such as exists in severe cases, has a far more depressing effect on the heart and nervous system, & therefore on the circulation, than can possibly be exerted by the application of cold to the surface of the body. To judge from the spontaneous expressions of patients on the subject, it may be said that, so far from their feeling depressed by the treatment, they feel braced up & refreshed.

§ Affleck, l. c. also Bristowe in Braithwaite's
Retrospect. Vol. 89 P. 145

It has also been urged against this treatment, that it is apt, when used in typhoid fever, to cause congestion & collapse of the lungs, as well as intestinal congestion & haemorrhage. I have carried out the treatment of typhoid fever in a large number of cases by the cold pack, & have never yet seen any evil results. Of course, such a powerful agent as cold requires to be used with caution, & it is very likely that, if the cold pack were not removed as soon as the temperature fell to 100° , but were persevered with till the temperature fell to the normal or below it, it might be followed by grave consequences. It is considered by most authorities desirable to stop the use of cold as soon as the temperature falls to 100° or 101° , seeing that it generally falls one or two degrees in the course of a few minutes after the pack is removed.

As to congestion of the lungs, it is a remarkable fact that all the advocates of

§ *Quain's Dictionary of Medicine. Vol. II P. 1688; also
British Medical Journal 1/3/24 P. 413*

* *British Medical Journal. l. c.*

hydropathic treatment advise that the use of cold should be persisted in, in spite of pulmonary complications. Thus Dr. Broadbent says [§] that pulmonary affections do not constitute a bar to the employment of cold, & he has known pulmonary congestion clear up after a single bath. Sanson also* remarks that, as to its causing pneumonia, he invariably uses cold baths or cold packing in severe cases of this disease. He considers that the suggestion of M. Lagan, that congestion of internal organs is caused by this treatment, is supported neither by theoretical considerations nor by experience. I have myself seen congestion of the lungs & pneumonia supervene in the course of typhoid fever, in cases treated early with the cold pack, & have persisted in the use of cold, especially as these complications raised the temperature higher than it had been before. In all such cases the lung-complication cleared up.

§ *British Medical Journal. l. c.*

* *Braithwaite, Vol. 81 P. 14.*

quickly, & recovery followed.

As to "intestinal haemorrhage & other lesions of internal organs" generally, Dr. Couplan asserts that they are diminished by this treatment, & that, as a matter of fact, those who use it do not meet with those lesions of internal organs that are feared by the opponents of the treatment. I can corroborate this statement, as, out of more than forty cases of typhoid fever, I have only once met with intestinal haemorrhage. In that case, the temperature being but slightly reduced by the haemorrhage, I persisted in the use of cold, contrary doubtless to the advice of most authorities; but, seeing that Jenner* advises the use of an ice-bag over the iliac region, when intestinal haemorrhage occurs, I considered myself justified in persevering with the use of the cold pack, & was gratified to find my patient steadily recover.

It has been said that the treatment of

§ *British Medical Journal*. 6/12/84 P. 1126.

* *Haldon*. April 1884 P 919

continued fevers by the external application of cold savours too much of routine, and, to a certain extent, this is true. Routine treatment in medical practice is generally unwise, but even Dr. Gairdner, who objects decidedly to routine measures in the treatment of typhoid fevers as in that of other diseases, admits ^{that} cold, applied outwardly, is the best of the antipyretics, & the least subject to abuse, & thinks that a tolerably good case has been made out for its use early in typhoid fever.

Finally, it has been asserted, by a writer in the *Edinburgh Medical Journal*,* that it is a pure assumption (1) that the pyrexia of typhoid & other fevers is the chief source of danger, & (2) that, by keeping it within proper limits by the use of cold, the patient's chances of recovery are increased. This writer goes on to say that it is an assumption without one single fact to support it, although recognized authorities

§ Bäumler: Deain's Dictionary, Vol. II, P. 1602

maintain that it is true, & the bulk of the profession have come to believe that it is true." But he does not tell us what "the chief source of danger" in fevers is. If it is not the continuous high temperature, with its destructive effect on the tissues, what is it?

As to the second point, those physicians, who have had most experience of the use of cold in fever, agree that the patient's chances of recovery are undoubtedly increased. In proof of this, I might cite the statements of many authorities, some of them physicians to Fever Hospitals, but the following^s will suffice; — Rise of temperature being the chief & most important symptom of pyrexia, leading of itself to serious consequences, especially by weakening the heart's action, it becomes necessary in many cases of protracted febrile disease to treat the febrile temperature symptomatically. It has now been shown by

overwhelming experience that the course of the specific fevers, although it cannot be cut short, can yet materially be influenced, by keeping the febrile temperature artificially down by means of cold baths or wet packing, & by antipyretic medicines. And it is very important not to wait, in a case with continuous high temperature, until symptoms of failure of the heart's action show themselves, but to try to prevent these symptoms by keeping down the temperature. Patients treated early on this principle will be found much less frequently to pass into that state, & sleep more soundly, & to retain their appetite: bedsores & other serious complications being of much rarer occurrence: & it has been established that the mortality in specific fevers has, by the antipyretic treatment, been considerably diminished, & that convalescence also is quicker than in cases

treated on the expectant plan." Two points certainly are established, viz. that by the hydropathic treatment of fever, though death may come through some other avenue of approach than through the pyrexia, this one is obstructed, & that "the anxious period of slow rebuilding" which follows deforescence is very much shorter than after other methods of treatment.

As to the rationale of the use of cold externally in febrile diseases, it is generally believed by the advocates of this method of treatment that it produces its powerful effects, not only by directly abstracting a certain amount of heat from the body, but also by rousing into activity the heat-controlling functions of the vasomotor centres, through stimulation of the cutaneous nerves. By this means the unnatural formation of heat is prevented.

I will now take up seriatim the various febrile diseases, in the treatment of which the cold pack is useful, & point out the indications for its employment.

In typhoid fever, as soon as the axillary temperature reaches 102°F , the patient should be sponged with cold water, but as in most cases the temperature cannot be sufficiently controlled by this means, it is advisable to resort to the cold wet pack, as soon as the temperature reaches 103° . The nurse should be instructed to take care that the temperature does not rise above this point, & that she can easily do by the careful and regular use of the thermometer. The cold pack should be continued till the temperature is reduced to 101° , & should be repeated as often as may be required. During its employment the temperature

§§ *Hint. American Medical News. 7/1/82. P. 2.*

(slightly altered).

should be carefully noted. If, at any time, the pulse becomes feeble, the respiration disturbed, or the lips livid, the measure should be at once discontinued." This, however, must be a rare occurrence. The only unpleasant subjective effect, which I have ever observed, has been a slight shivering which speedily passed away, when the cold pack was removed.

It is impossible to say beforehand, in a given case, what length of time will be required to reduce the temperature to 101° . Usually it takes from twenty to thirty minutes, but the time may range from five minutes to an hour. Even in the same case, the pack will reduce the temperature more quickly at one time than at another. In an obstinate case, where there is a difficulty in bringing down the temperature, the addition of ice to the water in which the sheet is dipped, & the subsequent sprinkling with ice-cold

- * § *British Medical Journal*. 1/3/24 p. 399-400
- * *Cassell's Yearbook of Treatment for 1887*. p. 93.

water, will have the desired effect.

This mode of treatment is decidedly preferable to that by means of quinine & other antipyretic drugs, which, when given in large & frequently repeated doses, have a great tendency to hinder the digestion & assimilation of food, a point which is of vital importance in typhoid fever. As Bayley^d & Mahomed* observe, drugs should be regarded as adjuncts of the treatment, & not as substitutes.

It is also preferable to the expectant method of treatment, for, not only does it visibly improve the condition of the patient at the time, enabling him to obtain refreshing sleep, & increasing his appetite for food, but, as it conserves the patient's strength, convalescence is rendered much quicker.

It is generally agreed by those who have used the cold pack extensively in typhoid fever, that it diminishes the mortality.

§ *British Medical Journal*. 6/12/87. P. 1123-4.

This is a point which cannot be determined very well by statistics, as so much depends on the severity of the epidemic, & on other circumstances, but, making due allowance for the "personal equation", it may still be said that the individual observation of almost all those who have tried the hydropathic treatment points clearly to this conclusion. As to its "abolishing the mortality", - a phrase which Dr. Collic^g of London, a decided opponent of the cold-bath treatment, uses as expressing the opinion of its advocates on the point, - there can be no doubt that no treatment of any kind is ever likely to have such a desirable result. We can only hope for a diminution of the mortality.

There is reason to believe that the use of the cold pack diminishes the diarrhea of typhoid fever, & tends slightly to confine the bowels. This effect is mentioned by

§ *Treatise on Continued Fevers* 1st ed. P. 568

* *Ringer's Therapeutics*. 6th ed. P. 19. Noticed also by
Dr. Yonge-Smith in *Lancet* 25/8/83 P. 347

Murchison, & Brand* asserts that it is usual. I think I have observed the same effect, for, though almost all my cases had diarrhoea at the commencement of the fever, in most the bowels became slightly confined in the course of a week or ten days, & in some cases, an enema had to be given every second day.

The only contra-indications to the use of the cold pack in typhoid fever are generally stated to be intestinal hæmorrhage, perforation of the bowels, & great feebleness of the heart's action. As regards the first, I have already pointed out why I do not regard it as a contra-indication, unless it be so excessive as to cause of itself a considerable reduction of temperature. In a case of typhoid fever, which I attended three years ago, where the patient was four months pregnant, abortion took place at the beginning of the third week of the disease. The cold pack

had been used early in the case & throughout its course, with the invariable result of reducing the temperature, & improving the condition of the patient. She was to be for its re-application, as it was only after having it applied that she was able to obtain sleep. Abortion took place suddenly during the night, followed by a severe flooding, which reduced the temperature at once from 103° to 99° . After the flooding had been checked, the temperature rose slowly to the normal, & thereafter she made a rapid convalescence. Now in that case, where the haemorrhage was excessive, & where the very loss of blood itself reduced the temperature, there was no call for the re-application of the cold pack, & the same may be said of cases of intestinal haemorrhage where the temperature falls several degrees before or after its occurrence. But where the haemorrhage is moderate, & does not ap-

§ Ziemssen's Cyclopaedia Vol I P. 208

precisely affect the temperature, I do not see that one has anything to fear from the use of the cold pack.

As for perforation of the bowels, and weakness of the heart's action, they are clear contra-indications to the use of cold externally. In regard to the latter point, I may quote the words of Liebermeister: - "When the force of the circulation is so reduced that the surface of the body is cold, while the interior is very hot, there is no hope whatever that a further cooling of the surface will make any difference to the interior."

Congestion of the lungs and Pneumonia do not contra-indicate the use of cold externally, for, as has been already pointed out, they commonly clear up under its use. This I have observed on several occasions, & as will be shown further on, the cold pack is often of signal service in Pneumonia.

§ *Parvner's Clinical Medicine* P 191

* *l.c.*

Scarlet fever, when uncomplicated, being essentially a short fever, there is a tendency among many physicians to leave it to itself, with the knowledge that, in a few days from the onset, the fever will have run its course, and "with rest & careful nursing will generally go on well." As Professor Gairdner states, the mere violence of the fever & the excessively sore throat are not dangerous symptoms in that disease. Even "violent delirium" he considers "may be safely neglected," i. e. left untreated, as it will disappear when defervescence occurs. He quotes, in support of this view, the statement of Heberden to the effect that there is no disease in which the patient is more apt to be delirious, & with less danger, than in Scarlatina. Dr. Gairdner also shows* that most cases of this disease, when left to themselves, — their only treatment being to have the throat steamed

from the beginning to the end of the fever, - recover just as well, as those treated otherwise.

Now this treatment, or rather absence of treatment, may prove satisfactory enough in hospital practice, but in private practice the practitioner is expected to relieve symptoms which prove distressing or disagreeable, even though they are not dangerous or alarming. One has to bear in mind that, what may not be alarming to the practitioner, may be intensely so to the patient's friends. Hence one is led to adopt a method of treatment which will relieve these distressing symptoms. The best method in my experience for cooling the hot burning skin, & diminishing the restlessness & nervous excitement of Scarlet fever consists in the application of the cold wet pack. Dr. Fairman states, that, though he has not employed it,

§ Braithwaite. Vol. 84. P. 27-28.

he does not disapprove of the use of cold affusion in children, when the reaction is high, & when it gives comfort. The cold pack is quite as efficacious as cold affusion & much less alarming to the patient, & it certainly gives great comfort, as any one who tries it can not fail to observe. As Dr. Manson Fraser of the Homerton Fever Hospital says, "it changes sleeplessness & delirium into quiet rest."

In mild and uncomplicated cases, cold or tepid sponging of the body may be used. In moderately severe cases, where the temperature ranges from 103° to 105°, the cold pack should be used in the manner already detailed, being re-applied as often as necessary. In cases of hyperpyrexia, where the nervous excitement & restlessness are usually great, & where delirium, coma, or convulsions are apt to supervene, the

§ *Mahomed in Cassell's Yearbook of Treatment
for 1884. P. 100.*

* *"On the Diseases of Children". P. 821*

§ *Clinical Medicine P. 460*

cold pack proves of immense value, quickly reducing the temperature, diminishing the frequency of, & giving strength to, the pulse, soothing & tranquillizing the patient.

"It acts as a nervous stimulant, refreshes & soothes the patient, & often gains for him temporary repose." § On this point Meigs and Pepper make the following remark: —

"Should the temperature continue to rise after it has reached 105°, the cold treatment ought to be resorted to, even though these nervous phenomena have not shewn themselves, since they will be almost certain to appear, should the temperature go on rising." *

The cold pack should be employed, as Flint § advises, "without any reference to the eruption." For, where the temperature is high, & there is little or no eruption, the cold pack, besides relieving the intense heat, often succeeds

§ Treatise on Therapeutics 6th ed. P. 12-14

* Do. Do. 4th ed. P. 62

in bringing out a brilliant rash; and again, where the temperature is high & the rash vivid, the cold pack has no such effect as is commonly feared, viz. that of causing the rash to recede. Indeed, in cases of recession of the rash, most authorities recommend the use of cold externally, except where the surface of the body is already cold. Where the rash is livid, & the surface of the body cold, a hot mustard bath is the proper remedy, but its use in cases where the skin is exceedingly hot & dry, & where there is great nervous disturbance, is decidedly to be deprecated.

For the relief of the sore throat accompanying the fever, the cold wet pack to the neck, renewed every three hours, should be continued during the whole course of the fever, as recommended by Ringer & Bartholow,* both advocates of the hydropathic treatment of Scarlatina. Along with

§ Quain's Dictionary. vol I p. 243.

the cold compress to the throat, the frequent gargling of the throat with warm water, or the constant inhalation of steam, gives great relief, & is in most cases quite as efficient as the caustic applications so often used.

While the cold pack is being used to reduce the temperature, internal remedies, such as carbonate of Ammonia, may be given, if any special indication arises.

In malignant scarlet fever, Drs. Hillier & Gee^d have both testified to the utility of the cold pack, but unfortunately in such desperate cases there is usually such a formidable array of symptoms, coming on so suddenly, that there is no time to do anything, and when there is time, all measures too frequently prove useless.

The only contra-indication to the use of the cold pack in scarlet fever is to be found in weakness of the heart's action.

§ Cassell's Yearbook of Treatment for 1887. P. 100

Cold packing has been employed in other fevers, as typhus, smallpox & measles. As for the two former, I have had no experience of them, but can readily believe that the cold wet pack will be found as useful in them, as in typhoid fever & scarlatina. The late Dr. Mahomed has declared^s that antipyretic measures will often relieve patients suffering from typhus, & will induce that refreshing sleep which is so necessary to the successful treatment of the malady. With regard to measles, the remarks already made on the subject of the short duration of scarlet fever, & the consequent absence of any necessity for antipyretic measures, apply a fortiori to this disease. Nevertheless cases occasionally occur, with high temperature & nervous symptoms preceding or accompanying the appearance of the rash, where, according to authorities, the use of cold is clearly

56.
§ Mahomed. loco citato. P. 101.

* Diseases of Infancy & Childhood, 6th ed. P. 49.

indicated. In such cases it should be used just as in Scarlatina. It can be employed "without harm to the patient, & does not, as might be expected, increase the pulmonary complication." § The testimony of Dr. Charles West of the value of the cold pack, in the treatment both of Scarlatina & of Measles, is noteworthy. He says; * - "In the case of the formidable symptoms which usher in the exanthemata, I have of late years tried the use of the wet sheet, I have seen the packing in the wet sheet followed, in the course of one or two hours, by an abatement of temperature, a cessation of convulsions, & a return of consciousness, as remarkable as I have ever observed follow from even a copious bleeding, while the action of the skin has certainly been more speedily established, and the appearance of the eruption has been

brought about sooner & more satisfactorily than by any other means with which I am acquainted.

Rheumatic fever is now so much under our control, & yields in most cases so readily to Salicylate of Soda, that the cold pack is scarcely, if ever, used, except in cases of hyperpyrexia. When hyperpyrexia occurs in this affection, it generally does so very suddenly, the temperature rising quickly several degrees, & placing the life of the patient in imminent danger. Up till a comparatively recent period, when a Committee of the Clinical Society of London advised the use of cold externally in the hyperpyrexia of acute rheumatism, it was considered quite beyond the power of the art of Medicine to meet this sudden & dire emergency. Now, however, thanks to the labours of that Committee, it is universally agreed that the external use of cold in such cases

§ British Medical Journal 3/6/82 p. 808
(Latter part of quotation slightly altered.)

* Theory & Practice of Medicine. 1st ed p. 880

will obviate the tendency to death, & ought therefore to be unhesitatingly resorted to. This is a step that must be taken quickly and at once, if the patient's life is to be saved. The chances of its efficacy are greater the earlier it is had recourse to. The temperature cannot safely be allowed to rise above 105° .

..... If this treatment were systematically adopted, the mortality in rheumatic hyperpyrexia would be materially diminished. §

If the high temperature prove obstinate and difficult to reduce, ice must be added to the water in which the sheet is dipped, & it is seldom indeed that the ice-pack will fail to reduce the temperature. Even though endocarditis or pericarditis is present, as is commonly the case in rheumatic hyperpyrexia, the cold pack must be assiduously & courageously employed. Bristowe* remarks: — There is no doubt that patients are

§ *British Medical Journal* for 1883. Vol. II. P. 769
also for 1881. Vol. II. P. 932.

† *Lancet* for 1881. Vol. I. P. 867.

often temporarily benefited by this treatment in a remarkable degree. It is less certain that their ultimate recovery is materially promoted by it." It is difficult to understand how this latter statement can be made, after finding cases of rheumatic hyperpyrexia invariably terminate fatally when cold has not been used, & almost invariably recover when it has been. Cases are on record where the temperature, in spite of Salicylate of Soda, etc. rose rapidly to 104° , the patient meanwhile becoming comatose, but where, by the external use of cold, it was effectually reduced, consciousness was restored, and recovery followed. Such cases I have myself seen. We may therefore conclude that patients are not only temporarily but permanently benefited by this treatment, & that in the timely application of cold to the surface lies the patient's only chance of

recovery

The close analogy which Pneumonia bears to the acute specific diseases has often been remarked upon. It is so uncommon occurrence to find a rise of temperature preceding for some time, it may be for days beforehand, the development of the physical signs.

Hence many physicians are inclined to regard Pneumonia as a specific fever, developing itself locally in the lungs, just as typhoid fever attacks the intestines, & to treat it accordingly. Consequently in this disease, just as in continued fevers, the outward application of cold has established itself as a valuable mode of treatment in certain circumstances. Whether the pyrexia of pneumonia be purely symptomatic of the lesion in the lung or not, there is no doubt that the external application of cold, if managed with due discrimination

§ *British Medical Journal*. 13/10/83 p. 726

* *Quain's Dictionary*. Vol. I. p. 883

and care as in other febrile affections, can do no harm. As Flint observes, § "it is free from danger, & acts quickly & beneficially."

Seeing that quinine usually acts remarkably well in this disease, the cold pack need not be used unless where quinine disagrees, or has failed to reduce the temperature, as occasionally happens.

Where the temperature reaches 104° in spite of quinine, the cold pack should be used, especially if delirium or other urgent symptoms resulting from a continued high temperature be present, & provided always that the patient is strong, the pulse good, & the disease uncomplicated. There can be no question, as Dr. J. H. Green remarks* that

"the external application of cold is a much more efficient agent than quinine in diminishing the pyrexia of pneumonia," & it should therefore be used with confidence

§ Theory & Practice of Medicine. 1st ed P. 415

when necessity arises.

The use of the cold pack in this affection applies specially to children, for it is quite impossible to induce children to take quinine, whereas, by using a tepid pack first and following it up with a cold one, little or no difficulty is met with, & no alarm or fear is excited. I have myself used it in a few cases of this affection in children, & found it act cito, tuto, et jucunde, reducing the temperature & the frequency of the respirations, diminishing the restlessness & wandering, & inducing quiet sleep. Bristowe states in his usual cautious style, that "cold compresses to the chest have probably some beneficial influence". The authorities whom I have already quoted, as well as many others, state positively that cold applications have a beneficial influence, & this is my own ex-

§ "On the Curability of Tubercular Affectims."

§ Lancet 16/9/82. P 427-9

perience.

From Pneumonia to Acute Phthisis or Acute Tuberculosis the transition is not very great. This dire disease has been generally considered absolutely hopeless, but Professor McCall Anderson claims to have treated it successfully by means of the ice-pack, or, as he describes it, by the application of flannels wrung out of iced water over the abdomen, at intervals, for half an hour at a time. As an adjunct to this treatment, he administers Kiemeyer's antipyretic powders, containing quinine, powdered digitalis & opium, & injects atropine subcutaneously to check the sweating. Some have called in question his results, & have doubted the correctness of his diagnosis, their view being that acute tuberculosis is necessarily fatal. But, as Dr. Octavius Sturges of Westminster Hospital shews, "acute tuberculosis is

§ *British Medical Journal* 6/9/84 p. 473

not necessarily fatal. We have ample justification in laying down this proposition as true, viz. in youth as well as in childhood threatened tuberculosis recovers. Acute tuberculosis regarded from a clinical point of view is to be distinguished from the actual deposition of tubercle as an anatomical fact. The premonitory fever which precedes the deposition of tubercle is curable, but may of itself suffice to produce death; but the deposition of tubercle marks the termination of hope? As I have had no experience of acute tuberculosis, I have been unable to put Dr. Anderson's treatment of it to the test.

At the International Medical Congress held in Copenhagen in the autumn of last year, Professor Vincent of Lyons read a paper advocating the treatment of Puerperal Fever by cold baths. §

§ *Manual of Midwifery 4th ed. P 483*

He concludes that cold baths are free from danger in the puerperal state, that they have a certain & quick anti-febrile effect in the sequelae of delivery: that recovery from puerperal fever is the rule with such treatment, & that cold baths are indicated in all high temperature forms of after-complications of childbirth, the very acute peritonites excepted. The indication for them does not arise, however, except where the powerlessness of quinine & diffusible stimulants in full doses has been shown. Meadows, on the other hand, remarks § that, though he has seen the cold pack adopted in cases of this disease, it has not been successful. Having fortunately had but little experience of any of the numerous varieties of this affection, I am not in a position to give any opinion on the subject.

I think I have shown that the external application of cold, especially in the form of the wet pack, has not only a legitimate, but also a high place in the list of remedies at the disposal of the physician, in the treatment of typhoid fever, & other febrile diseases. It is at least a noteworthy fact, that most of those who have brought it into requisition in the treatment of these affections, speak in high terms of its value, & are thankful to have such a powerful & efficient antipyretic agent at their command, while patients are generally grateful for its immediate cooling effect, and for the comfort & general improvement experienced by them in its employment.