orthopnea, but cyanosis is not so marked as it is when the heart becomes much implicated. Another prominent symptom, in this tendency, is pain or distress in the epigastric region, which, in all probability, comes from the diaphragm, and is evidence that this organ, in endeavouring to establish compensation for the loss of pulmonary movement, is being overworked.

Another tendency towards death comes through paralysis of the heart. This is partly due to a want of cardiac innervation, and partly to obstruction of the pulmonary circulation. It is very readily seen that stasis of the blood in the lungs, such as is found in acute pneumonia, will at once interfere with the free flow of blood through the right side of the heart, and lead to distension of the right ventricle. It becomes a question, therefore, of the greatest importance, whether this tendency is best overcome by stimulating the heart's action, or by removing the obstruction in the lungs, to which I shall revert further on.

The fourth tendency towards death, of which I shall speak, is fever with its consequences. According to Ott, Aronsohn, and Sachs, Eulenberg, and Landois, fever is always evidence that the function of heat co-ordination is disordered and that it has lost its power of restraining excessive heat production, or heat dissipation, or both. The same observers have shown that this power of heat regulation resides in the six heat centres, two of which are in the cortex and four at the base of the brain, and that electric or mechanical irritation of these centres produces a temperature-rise lasting for hours. Fever is, therefore, essentially a neurosis, and one of its dangers lies in the well-known fact that it is a great tissue-waster. Besides this, fever also generates toxins in the body which, according to the experiments of Vincent, are capable of causing convulsions, stupor, and death in guinea-pigs, sparrows, and frogs.

Now, the therapeutic indications which may be drawn from the foregoing considerations are as follows: (1) *Reduction of the volume of blood in the lungs.* This relieves the distension of the pulmonary capillaries, checks the serous exudation and catarrhal infiltration, abates the stasis in the pulmonary blood-vessels, restores the cardio-pulmonic circulation, and relieves the strain on the right side of the heart. (2) *Reduction of fever.* This allays the irritability of the nervous system, diminishes bodily waste, and lessens the danger of toxin formation in the blood. (3) *Support of the nervous system* in general, and the pulmonary nerve supply in particular. (4) *Support of the heart's function.* (5) *Nourishment of the patient.*

Now, what is the agent or agents that will meet most of these indications in the best possible way? I believe we possess this agent in ice, or ice-cold water applied in rubber bags locally to the chest and directly over the seat of inflammation; and this for the following physiological reasons: Cold contracts blood-vessels, reduces fever, stimulates the whole nervous system, and supports the action of the heart. Practically, as I have witnessed time and again, the ice will check extension of the inflammatory process, promote resolution, disperse the products of exudation, reduce the fever, diminish the cardiac and respiratory frequency, tone up the heart, strengthen the pulse, alleviate the difficult breathing, abate pain in the chest, and give general comfort to the patient.

The number of ice-bags which are to be applied in any case depends on the degree of fever which is present, and on the size of the area which is inflamed. If the fever is not very high and the area is small, one or two will answer. If the fever is high and the involved area large, almost any number may be applied, always bearing in mind that the head should have one or two bags applied constantly. On one of the worst patients I had I applied nine, which covered the whole chest, sides and front, and two to the head. The length of time during which they are applied also depends somewhat on the range of fever. If the temperature falls near the normal then I think it is wise to remove some of the ice-bags, but think it is best not to remove them all, even though the temperature is down, unless the crisis is at hand, because if all the bags are removed before the proper time, the temperature will rise again, and is brought down with greater difficulty the second than the first time.

To be continued.

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