

etiologic agent belongs to one of the other groups, the serum treatment should, of course, be discontinued.

Serum should not be administered without preliminary tests to determine if the patient is sensitive to this type of serum.

Oxygen Therapy. — Anoxemia occurs frequently in pneumonia and it may be eliminated by the proper oxygen therapy. The beneficial effects of oxygen therapy in pneumonia are shown by the following changes:

1. The patient is more comfortable as a result of quieter breathing.

2. The tachycardia is lessened and frequently there is a drop in body temperature and a slowing of the respiratory rate.

3. The arterial saturation is increased and the cyanosis disappears.

4. There is every reason to believe that life is prolonged and a longer period is thereby given for immunity processes to develop.

If oxygen therapy is to be used, it is essential that it should be instituted early in the course of the disease at a time when the earliest evidence of cyanosis appears. Furthermore, it should be continued for some time after it has completely disappeared.

Digitalis. — In patients with a heart of normal size, and this is usually the case in lobar pneumonia, the effect of digitalis is to decrease the volume output of the heart. This is because the heart is contracted to an inefficient size and although the strength of the shortened stroke is increased, the result is that the volume output of the heart falls. If digitalis in full

therapeutic doses is given to the usual patient with pneumonia, therefore, it will cause a decrease in cardiac output and a resultant deleterious effect. On the other hand, if a patient has a hypertrophied heart, the drug causes it to decrease to a more efficient size and this, with the increase in the strength of the stroke, causes an increase in the cardiac output. The indication for digitalis therapy in patients with lobar pneumonia, therefore, is a heart which is larger than normal or in the presence of auricular fibrillation or auricular flutter, and these two types of arrhythmia are estimated to occur in only about 5 per cent of all cases.

Miscellaneous Drugs. — The only drugs which the author has found to be of service in the treatment of lobar pneumonia are those which secure rest for the patient and relieve pains. Of greatest value are the hypnotic drugs, such as the barbituric acid derivatives, whether alone or in combination with codeine. If these preparations fail to secure rest, he does not hesitate to turn to the judicious use of morphine. Morphine is indispensable in some cases but it should be used only when other sedatives and hypnotics fail, and then with great discrimination. The untoward effects of morphine are sometimes very slight, but if cyanosis is marked and breathing labored, its depressing effect on the respirations may be minimized by administering $7\frac{1}{2}$ grains of caffeine sodium benzoate intramuscularly or by placing the patient in an oxygen tent in which a 5 per cent carbon dioxide mixture is maintained as a stimulant to the respirations.



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