Embolism of the retina is not a very rare misfortune, and, by the unvarying law of chance, a certain percentage of cases end later by Bright's disease. Examination of a number of these might throw light on the etiology of monocular retinitis.

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THE ANTIGEN TREATMENT OF PNEUMONIA IN INFANCY AND CHILDHOOD.

BY

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ECTO-ANTIGENS or immunogens have recently been introduced into biological therapy; the theoretical basis and experimental work on which their manufacture is based have been described by Sir Thomas Horder,¹ and by Ferry and Fisher.^{2,3} This type of vaccine is probably less toxic than the older types, so permitting much larger quantities of the specific antigen to be administered without deleterious effects. In the autumn of 1926 I began using immunogen as a routine treatment in all cases of pneumonia and bronchopneumonia, and have compared the results obtained with those of the previous nine months.

All the patients were under 14 years of age, many of the infants suffered to some degree from rickets, a few from severe malnutrition, and in a few the pneumonia was terminal or complicated by severe enteritis. Cases of lobar pneumonia and bronchopneumonia are included, the majority being of the latter type. I have attempted to keep the standard of diagnosis uniform; all patients who showed evidence of pulmonary consolidation and symptoms of toxæmia were diagnosed as cases of lobar pneumonia or broncho-pneumonia, even though the disease was of brief duration. Some of these cases would doubtless have been regarded by others as capillary bronchitis or pulmonary congestion.

It is difficult to estimate the value of any specific therapy in the pneumonias of childhood. In the present series of cases some of the patients who had been ill only a few days, and who on admission showed signs and symptoms of bronchopneumonia, recovered in a few days after one injection of immunogen; but others with similar histories, signs, and symptoms recovered as rapidly without it. The combined pneumococcus immunogen of Parke, Davis and Co. was used; it is an extract of types 1, 2, and 3 of the *Diplococcus pneumoniae* together with an extract of haemolytic and non-haemolytic streptococci. Immunogen was injected as soon as a patient was admitted or as soon as the disease was diagnosed in a patient already in hospital. The dose varied from an initial injection of 5 minims in infants to 10 minims in older children. The injections were usually repeated on alternate days in increasing doses; six injections was the maximum number given in any one case; all were given subcutaneously by nurses; in no case did an abscess form, nor were any ill effects noticed.

From December, 1925, to September, 1926, fifty-five cases of lobar pneumonia and bronchopneumonia were treated without immunogen. From September, 1926, to February, 1927, fifty-six cases were given immunogen, but otherwise were treated in a manner similar to the earlier group.

Cases Treated without Immunogen.

Age.	No. of Cases.	Recovered.		Died.	
		Cases.	Per Cent.	Cases.	Per Cent.
Under 2 years ...	18	7	38.8	11	61.2
Over 2 years ...	37	30	81.0	7	19.0
Totals ...	55	37	67.2	18	32.7

Cases Treated with Immunogen.

Age.	No. of Cases.	Recovered.		Died.	
		Cases.	Per Cent.	Cases.	Per Cent.
Under 2 years ...	15	10	62.5	6	37.5
Over 2 years ...	40	40	100.0	0	—
Totals ...	56	50	89.3	6	10.7

The favourable results in the group of cases treated with immunogen were so marked that the records were examined again and cases in which the pneumonia was a terminal condition or had been complicated by some other disease were excluded; but the resulting figures were even more strongly in favour of immunogen, for three of the deaths occurring in infants under 2 years of age who had been treated with immunogen occurred respectively in a marasmic infant, in an infant already moribund at the time of injection, and in an infant who recovered from the pneumonia but who died a few days later from enteritis.

The number of cases is too small to warrant any dogmatic statement, but it would seem that the immunogen had a favourable effect; the duration of the disease did not appear to be shortened, but the mortality rate was reduced.

I wish to thank Lieut.-Colonel P. Macdiarmid, O.B.E., M.D., the medical superintendent of Alder Hey Hospital, for permitting me to publish this note.

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ZINC IONIZATION IN THE TREATMENT OF SUPPURATIVE OTITIS MEDIA.

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THE results of the treatment by ionization of chronic suppurative otitis media at Alder Hey Children's Hospital have been so successful that it has been adopted as a routine. Over 300 children have been treated in two years, and nearly all these have been discharged. They ranged in age from 1 to 16 years. In some there was a history of long-standing otorrhoea, and in others the condition developed whilst the patient was in hospital, frequently as a sequel to bronchopneumonia. Otitis is a frequent complication of pneumonia in infants, and explains the cerebral symptoms observed in many cases.

On the occasion of first attendance at the ear clinic a thorough examination is made in order to find out the exact conditions present, with a view to establishing the cause of the chronicity, and Friel's method of classification is followed.

Where otorrhoea is combined with infection of the nose and throat, these complications are first dealt with; if granulations are present an attempt is made to destroy them by electrolysis; if, on the other hand, the case is one of simple tympanic sepsis zinc ionization is instituted.

Method of Treatment.

The object of ionization is to render the tympanic cavity sterile, the method adopted being the passage of an electric current through a solution of zinc, utilizing the coagulation.