

9615 P

Icterus Complicating Pneumonia.
I. Corpuscular Fragility in the Normal Negro.

EDWARD L. TURNER, MICHAEL J. BENT, W. H. GRANT AND
 G. D. HOLLOWAY.

From Meharry Medical College, Nashville, Tennessee.

The latest editions of medical textbooks make only passing references to the icterus accompanying many cases of lobar pneumonia. Cecil¹ indicates that jaundice occurs in 5 to 10% of cases of lobar pneumonia and that the lighter form which is observed most frequently seems to have no significance while the deeper jaundice seen in other cases is associated with a toxic hepatitis and a grave prognosis. Musser² describes the jaundice that is present in a small number of cases of lobar pneumonia as often existing in connection with an enlarged liver and a tender area in the region of the gall bladder. Meakins³ barely mentions jaundice as a result of metastatic lesions in the liver in lobar pneumonia. Emerson,⁴ in a footnote, suggests that this jaundice may be due to the absorption of alveolar exudate or to a slowing of the portal circulation.

During the past year the authors observed 32 cases of lobar pneumonia in adult Negro patients admitted to the medical service of George W. Hubbard Hospital of Meharry Medical College. Twenty-five (78%) of these cases were clinically icteric. This clinical icterus (icteric sclerae, deeply pigmented urine, etc.) was confirmed in the laboratory by icteric index studies. There was no tendency towards tenderness over the liver or gall bladder in these cases and no indications of sufficient interference with portal circulation to account for the icterus. Elton⁵ has pointed out that icterus is more marked in the lobar pneumonia of Negro patients than that observed in Whites.

Because of this high incidence of clinical icterus in the Negro the authors felt it advisable to investigate certain aspects of normal

¹ Cecil, R. L., *A Text Book of Medicine*, 4th edition, Saunders, Philadelphia, 1937, p. 114.

² Musser, J. H., *Internal Medicine*, 2nd edition, Lea and Febiger, Philadelphia, 1936, p. 142.

³ Meakins, J. C., *The Practice of Medicine*, 1st edition, C. V. Mosby, St. Louis, 1936, p. 241.

⁴ Emerson, C. P., *A Text Book of Medicine*, 1st edition, J. B. Lippincott, Philadelphia, 1936, p. 30.

⁵ Elton, N. W., *J. Lab. and Clin. Med.*, 1931, **17**, 216.

Negro blood to determine whether some property of the red blood corpuscles might account for this difference. The resistance of the red blood corpuscles of the Negro to hypotonic salt solutions as studied in normal Negroes is briefly presented in this paper.

The relatively few workers who have investigated the resistance of the red blood cells to hypotonic salt solutions in cases of pneumonia have reported figures above that of normals. Needles⁶ reported figures as low as 0.3% for beginning hemolysis in severe cases. Petrongi⁷ found increased resistance of the red cells of children during pneumonia. His normal values were given as 0.36% to 0.44% and were obtained on 100 Brazilians of mixed races. He also suggested the possibility of race and climate playing a part in the difference in resistance of the red cells.

The figures given for the normal fragility of red cells in the standard textbooks of clinical pathology differ only slightly although several methods are used. Thus Todd and Sanford,⁸ Cummer,⁹ Kolmer and Boerner,¹⁰ Nicholson,¹¹ and Osgood and Haskins,¹² all give figures which fall within 0.45% NaCl for beginning hemolysis and 0.3% for complete hemolysis. Only Kilduffe¹³ gives a range as large as 0.47% for beginning hemolysis and 0.28% for complete hemolysis.

While running a series of fragility tests on patients with pneumonia in which jaundice was a complication, it was noted that many of the normal controls likewise gave figures which indicated increased resistance of their cells to hypotonic salt solutions. These latter findings led to the investigation of fragility test on normal Negroes, the preliminary report of which is given here.

Our series includes 56 rural school children between the ages of 6 and 16, and 38 young adults between the ages of 17 and 23. Careful checks on white and red cell counts, hemoglobin, and temperature

⁶ Needles, Robert S., *Arch. Int. Med.*, 1936, **57**, 174.

⁷ Petrongi, Gyoza, *Erythrocyte Resistance in Various Stages of Pneumonia* (quoted by above).

⁸ Todd and Sanford, *Clinical Diagnosis by Laboratory Methods*, 7th edition, Saunders, Philadelphia, 1931.

⁹ Cummer, *Clinical Laboratory Methods*, 3rd edition, Lea and Febiger, Philadelphia, 1931, p. 80.

¹⁰ Kolmer and Boerner, *Approved Laboratory Technique*, D. Appleton & Co., N. Y., 1931, p. 107.

¹¹ Nicholson, *Laboratory Medicine*, 2nd edition, Lea and Febiger, Philadelphia, 1934, p. 154.

¹² Osgood and Haskins, *Laboratory Diagnosis*, P. Blakiston's Sons Co., Philadelphia, 1931, p. 376.

¹³ Kilduffe, *Clinical Laboratory Procedure*, C. V. Mosby Company, St. Louis, 1936, p. 159.

showed that these persons were not ill at the time of our tests. Sanford's method as modified by Holloway was used.

Results. The cells of 72.2% of those tested did not show beginning hemolysis until a solution of 0.4% was reached. In 14.8% of the cases hemolysis did not begin until a solution of 0.36% NaCl was reached. This figure lies within the limits for complete hemolysis as given by several texts. In 22% of the cases complete hemolysis did not occur until a solution of 0.28% was reached.

At present our findings would indicate that the red blood corpuscles of the average Negro are more resistant to hypotonic salt solutions than is indicated for normals in textbooks. It is assumed by the authors that these normal values were probably obtained from the study of average groups of white patients. It is furthermore indicated that the factor of fragility of red blood corpuscles does not account for the high incidence of jaundice observed in lobar pneumonia in the Negro.

9616 P

A Pharmacological Ejaculation Test for Bio-Assay of Male Sex Hormone.

S. LOEWE.

From the Department of Pharmacology, Cornell University Medical College, New York City.

Mammalian tests for the male hormone are preferable to bird tests, a fact which has been stressed by Loewe and Voss since the discovery of the hormone^{1, 2, 3} and has gained general recognition through the differentiation of two active principles—testosterone and androsterone (Laqueur,⁴ Rucicka⁵). However, mammalian tests in use are unsatisfactory, in that not all of the functions governed by the hormone are observed. This objection does not apply to an ejaculation test since the latter requires the integrity of numerous central and peripheral sex functions. The production of ejacu-

¹ Loewe, S., and Voss, H. E., Letter to Akad. d. Wiss. Wien, Jan., 1927, published in *Akadem. Anzeiger*, Vienna, 1929, No. 20.

² Loewe, S., and Voss, H. E., *Klin. Wochenschr.*, 1930, **9**, 481.

³ Loewe, S., *Dermatol. Z.*, 1932, **64**, 223.

⁴ David, K., Dingemans, E., Freud, J., and Laqueur, E., *Z. Physiol. Chem.*, 1935, **233**, 281.

⁵ Rucicka, L., and Wettstein, A., *Helv. Chim. Acta*, 1935, **18**, 1264.