isolated from the brain so far, and its significance cannot therefore be assessed without further study. This is being carried out in the Pathology Department of the Armed Forces Medical College, India. It is difficult to state whether the neurological and hepatic syndromes were caused by a new mutant of influenza virus, by the activation during the influenza epidemic of an associated neuro-viscerotropic virus, or by a hybridization of viruses of the type produced by Burnet (1957) in his experimental genetic studies on viruses.

Summary

A short account of the origin and spread of the pandemic of influenza of 1957 is given. In India cases started appearing in Madras in May, 1957, and very soon after it spread to the rest of South India.

Out of a total of 9,459 cases of influenza admitted to military hospitals in South India, 30 developed manifestations of neurological and hepatic involvement. Sixteen of these were reported from one station in 17 days and five from another in 27 days.

These manifestations usually developed after an afebrile period following a typical attack of influenza.

They were ushered in by incessant vomiting followed by delirium, boisterousness, and coma. Half the patients showed localizing neurological signs; raised serum bilirubin was present in one-third.

All the 17 fatal cases were subjected to post-mortem examination. Respiratory system showed appearances typical of influenza. Influenza virus was isolated from the lungs in five of them. The liver showed a variable and indefinite picture. The brain showed congestion and diapedesis of cells. In one case neurone degeneration was present and influenza virus A was isolated from the brain substance.

Serological tests did not indicate an infection with arthropod-borne encephalitis viruses.

From the evidence presented it appears probable that the clinical manifestations of neurological and hepatic involvement are closely related to infection with influenza virus and are of a type not so far described in any other form of encephalitis reported from India. The significance of the morbid anatomy and histology and the exact causal relationship of the influenza virus to the syndrome are, however, not clear.

Our thanks are due to the medical officers who helped in the management and follow-up of the cases and to the officers and staff of the Pathology Department of the Armed Forces Medical College, Poona, for their help in the investigation of cases and examination of post-mortem material. We acknowledge the help and co-operation of the Virus Research Centre, Poona, in undertaking serological studies. Our thanks are also due to Dr. I. G. K. Menon, Deputy Director, Pasteur Institute, Coonoor, for his co-operation. We are grateful to various officers commanding military hospitals in Southern Command, D.M.S. Army, and the D.G. A.F.M.S., for permission to publish the report.

REFERENCES

- Abrahams, A., Hallows, N., and French, H. (1919). *Lancet*, 1, 1.
 Benjafield, J. D. (1919). *Brit. med. J.*, 2, 167.
 Burnet, M. (1957). *Sci. Amer.*, 196, 37.
 Chari, M. V., and Swamy, T. V. (1955). *Brit. med. J.*, 2, 1298.
 Cole, C. E. C. (1918). *Ibid.*, 2, 566.
 Edmundson, P., and Hodgkin, K. (1957). *Ibid.*, 2, 1058.
 Holland, W. W. (1957). *Lancet*, 2, 840.
 Kaul, S. (1955). *J. Army med. Cps (Poona)*, 11, 69.
 Lim, K. A., Smith, A., Hale, J. H., and Glass, J. (1957). *Lancet*, 2, 791.
 Smith, C. E. G., Turner, L. H., and Helliwell, C. J. V. (1957). *Brit. med. J.*, 1, 1412.
 Stuart-Harris, C. H. (1945). *Ibid.*, 1, 209.
 Webb, J. K. G., and Pereira, S. (1956). *Indian J. med. Sci.*, 10, 573.

ASIAN INFLUENZA (1957) IN ALLERGIC PATIENTS

BY

B. BENDKOWSKI, M.B., Ch.B.

*General Practitioner; Clinical Assistant, Allergy Clinic,
 North Lonsdale Hospital, Barrow-in-Furness*

The clinical, epidemiological, and pathological aspects of Asian influenza have already been described (*Brit. med. J.*, 1957; Smith *et al.*, 1957; Swee and Dourado, *Lancet*, 1957; Roberts, 1957; Zhdanov *et al.*, 1957; Fry, 1958; Martin, 1958).

Altogether I treated 344 cases of influenza in general practice during the epidemic in 1957, the first case being seen on August 25, 1957, and the last on November 3, 1957. The practice is an industrial one with 5,560 patients, and I am one of three partners. It was estimated that there were 216 allergic patients in this practice (Hamilton and Bendkowski, 1954). The number of allergic patients has risen with the increase in the size of the practice, and there are now about 250. I treat most of these, and have had an opportunity of studying the clinical course of Asian influenza among them.

Classification

The 344 influenza patients were divided into three groups: (1) allergic (124 cases); (2) non-allergic, but who came from allergic families (59 cases); and (3) non-allergic (161 cases). The distribution of allergic diseases in patients suffering from influenza is shown in Table I.

TABLE I.—Severity of Symptoms Among the 344 Patients

Allergic Disease	No. of Cases			Total
	Very Severe	Severe	Mild	
<i>Allergic Patients</i>				
Bronchial asthma ..	49	4	2	55
Allergic rhinitis ..	20	8	2	30
Respiratory allergy ..	9	2	2	13
Urticaria and angio-neurotic oedema ..	7	7	6	20
Atopic eczema ..	2	1	—	3
Contact dermatitis ..	1	1	1	3
Total ..	88	23	13	124
<i>Other Patients</i>				
With family history of allergy ..	12	25	22	59
Non-allergic ..	27	45	89	161

Findings

Each patient was examined and assessed according to severity of symptoms. This was judged by temperature, headaches, aches and pains, dizziness, vomiting, cough, dyspnoea, sweating, and prostration. Table I shows the severity of symptoms among the allergic patients and among the others.

TABLE II.—Main Finding on Physical Examination

Clinical Finding	No. of Cases		
	Allergic	With Family History of Allergy	Non-allergic
Laryngitis ..	15	29	105
Bronchitis ..	48	28	48
Bronchopneumonia ..	11	1	5
Lobar pneumonia ..	3	—	3
Bronchitis with asthma ..	47	1	—
Total ..	124	59	161

Every patient was examined with special attention to the respiratory system. Table II shows the main clinical finding. There were three cases of epistaxis among the allergic and one case of fits among the non-allergic patients.

Some patients managed to come to the surgery, but the majority of those suffering from influenza asked to be visited at their homes. Table III shows the distribution of home visits among the three groups.

All the patients suffering from influenza were ordered to bed. The duration of bed rest varied in the three groups of patients (Table IV).

TABLE III.—Home Visits

No. of Visits	No. of Cases		
	Allergic	With Family History of Allergy	Non-allergic
1	15	19	50
2	46	28	59
3	31	3	10
4	15	—	5
More than 4	9	—	8
Surgery attendance only	7	9	28
Admission to hospital	1	—	1 (died)
Total	124	59	161

TABLE IV.—Bed Rest

Duration	No. of Cases		
	Allergic	With Family History of Allergy	Non-allergic
< 1 week	24	20	65
1 week	59	24	50
1 week to 10 days	24	1	8
2 weeks	7	—	3
Over 2 weeks	4	—	2
No bed rest at all	6	14	33
Total	124	59	161

In an epidemic of influenza there is no time to wait for complications that might arise. The general practitioner has to deal with the cases promptly. His knowledge of the patients, their previous ailments, their house conditions, and the nursing facilities, as well as the clinical findings—all have to be considered before prescribing treatment. Table V shows the therapy given.

TABLE V.—Therapy

Drugs	No. of Cases		
	Allergic	With Family History of Allergy	Non-allergic
Antibiotics	101	27	65
Sulphonamides	16	14	30
Antispasmodics	54	—	—
Steroid hormones	11	—	—
Analgesics and cough mixtures	7	18	66

TABLE VI.—Time Away From Work or School (221 Cases)

Duration	No. of Cases		
	Allergic	With Family History of Allergy	Non-allergic
1 week	2	13	50
2 weeks	36	25	36
3 weeks	32	1	15
1 month	4	—	4
Over 1 month	2	—	—
Carrying on working	—	—	1
Total	76	39	106

All the working patients and the schoolchildren were advised to rest at home for at least a week to avoid any after-effects (Table IV).

Some of the patients complained of weakness, tiredness, dizziness, and other ill-defined symptoms. Such after-effects were diagnosed as post-influenzal debility. Table VII shows the nature of after-effects in patients suffering from influenza.

TABLE VII.—After-effects

Nature of After-effects	No. of Cases			Total
	Allergic	With Family History of Allergy	Non-allergic	
Chronic cough	39	3	11	53
Bronchial asthma	40	1	—	41
Debility	2	—	13	15
Otitis media	3	—	—	3
Total	84	4	24	112

Discussion

Asian influenza affected both the allergic and the non-allergic patients. The virus had a predilection for the respiratory tract, causing laryngitis, bronchitis, and in some cases pneumonia. Patients suffering from bronchial asthma, nasal allergy, or both together (respiratory allergy) were severely afflicted by influenza. Their symptoms were worse than those of the non-allergic patients. The majority of the non-allergic patients (105 out of 161) had only laryngitis. In the allergic group the majority of patients developed bronchitis or bronchitis with exacerbation of asthma, and there were 14 cases of pneumonia. Eight cases of pneumonia occurred among the non-allergic patients. Patients with a family history of allergy showed a tendency to develop bronchitis more readily than the non-allergic patients; there was one case of pneumonia among them.

The duration of bed rest and of the time away from work or school was longer in the allergic patients than in the non-allergic.

The therapy in allergic patients consisted of great amounts of antibiotics, antispasmodics, and steroid hormones; only seven cases were treated with analgesics alone. One non-allergic patient aged 83 died of bronchopneumonia.

The allergic patients caused a great deal of anxiety to their families and to the practitioner during the influenza epidemic. The after-effects, mainly exacerbation of asthma, persisted for a long time. The explanation for the severe clinical picture of influenza in allergic patients is beyond the scope of this article and beyond our present knowledge. Infectious and allergic diseases however, have one thing in common: the antigen-antibody reaction.

Summary

Observation was kept on 344 cases of Asian influenza occurring in general practice. There were 124 patients with personal history of allergic diseases. Allergic patients were severely afflicted by influenza, developing bronchitis, asthma, and pneumonia more readily than the non-allergic patients. The incidence of after-effects among the allergic patients was higher than in the non-allergic.

REFERENCES

- Brit. med. J.*, 1957, 2, 757.
 Fry, J. (1958). *Brit. med. J.*, 1, 259.
 Hamilton, N. J. T., and Bendkowski, B. (1954). *Ibid.*, 1, 1069.
Lancet, 1957, 2, 835.
 Martin, W. J. (1958). *Brit. med. J.*, 1, 419.
 Roberts, G. B. S. (1957). *Lancet*, 2, 944.
 Smith, C. E., Turner, L. H., and Helliwell, C. J. V. (1957). *Brit. med. J.*, 1, 1412.
 Swée, Y. O., and Dourado, H. (1957). *Ibid.*, 2, 1523.
 Zhdanov, V. M., Ritova, V. V., Orlova, A. V., Sokolova, W. W., and Golygina, L. A. (1957). *Lancet*, 2, 735.