STATUS OF RESPIRATORY VIRUS INFECTIONS IN TURKEY*

Prof. Dr. Sabahattin Payzın **

Except during severe influenza epidemics, respiratory virus diseases are not subject to notification in Turkey. Thus, the author is not in a position to present definitive data with regard to the respiratory illnesses in Turkey. Even so, we have undertaken a summary of available information.

Influenza

Turkey has faced many influenza outbreaks, and in 1889 - 90 and 1917 influenza pandemics caused many deaths. During the winter of 1934 - 35 another severe influenza epidemic with a high morbidity rate swept over the big cities in Turkey. Unfortunately it is not possible to give data on these, due to lack of published information.

Influenza Epidemics 1948 - 51 : Some data, including laboratory findings, were published by Payzın and Okkan[1] about the 1949 epidemic which lasted for four to five weeks in Ankara. They isolated the A/Ankara 1 - 2 - 3/1949 (WHO World Influenza Center) strains which caused the epidemic. A total of 220 (100 normal persons) sera were tested with the complement fixation test by using Hoyle's mouse lung complement fixing antigens. The results are shown in table 1.

TABLE 1

COMPLEMENT FIXATION TEST RESULTS OF 240 SERA DURING THE ANKARA INFLUENZA EPIDEMIC OF 1949

Number of Sera	Source of Sera Tested	A antigen					B antigen	Negatives	Anti complementary	Positive P.C.
		1/2	1/4	1/8	1/16	1/32	1/2 - 1/32			
120	Patient	3	11	11	10	17	0	9	59	43
100	Normal	6	10	4	2	—	0	14	64	22

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** Professor of Microbiology, Chief, Department of Microbiology, Faculty of Medicine, University of Ankara.

The data given above clearly indicate that the epidemic was due to one of the prototypes of A' viruses which caused about 20 per cent morbidity in Ankara. No antibodies for B type viruses were traced in the blood sera of either sick or normal people. Complications arising from influenza, such as nephritis, hemorrhages, bronchopneumonia and others, including psychiatric syndromes, caused many deaths. Some case summaries are given in the original paper. Deaths in Ankara during the height of the epidemic are presented in table 2.

TABLE 2

DEATHS IN ANKARA DURING THE THREE WEEKS OF THE 1949 EPIDEMIC

Weeks of Epidemic	Causes of Deaths in 1948		Causes of Deaths in 1949	
	All kinds	Pneumonia	All kinds	Pneumonia
1	74	17	126	32
2	67	14	161	53
3	88	14	127	46

The epidemic spread to Istanbul, Konya, Balıkesir, Eskişehir, Sivas and other cities. The duration of the epidemic was very short : three to four weeks with residual sporadic cases.

Another epidemic influenza wave passed over Turkey in the winter of 1950 - 51 and was studied by Payzın[2-3] and by Berke.[4] This epidemic was also caused by A' virus and it was classified as A'L strain by the World Influenza Center (WIC) [2-5]. Similar viruses were isolated by Berke in 1951 and an A'L strain was isolated by the author in October, 1951. The epidemic was quite extensive but the clinical symptoms were relatively mild. A slight increase in deaths due to pneumonia was recorded.

From 1952 to 1954 many unsuccessful attempts were made to isolate the influenza viruses, although influenza - like epidemics occurred. Payzın[6] in 1953 tested some 500 sera for swine influenza (Shope 15), PR8, B Lee and A'L strains. No increase of titers was observed. The sera were secured from different parts of the country. Although pork is not consumed in this country and swine herds are rare, swine influenza antibodies have been demonstrated in 90 per cent of the sera in titers of 1 : 20 to 1 : 640.

In the winter of 1956 - 57 a very mild epidemic occurred and A/Turkey 1/57 strain which resembles A/Nether. 36/56 was isolated by Arı and Özlüarda.[7]

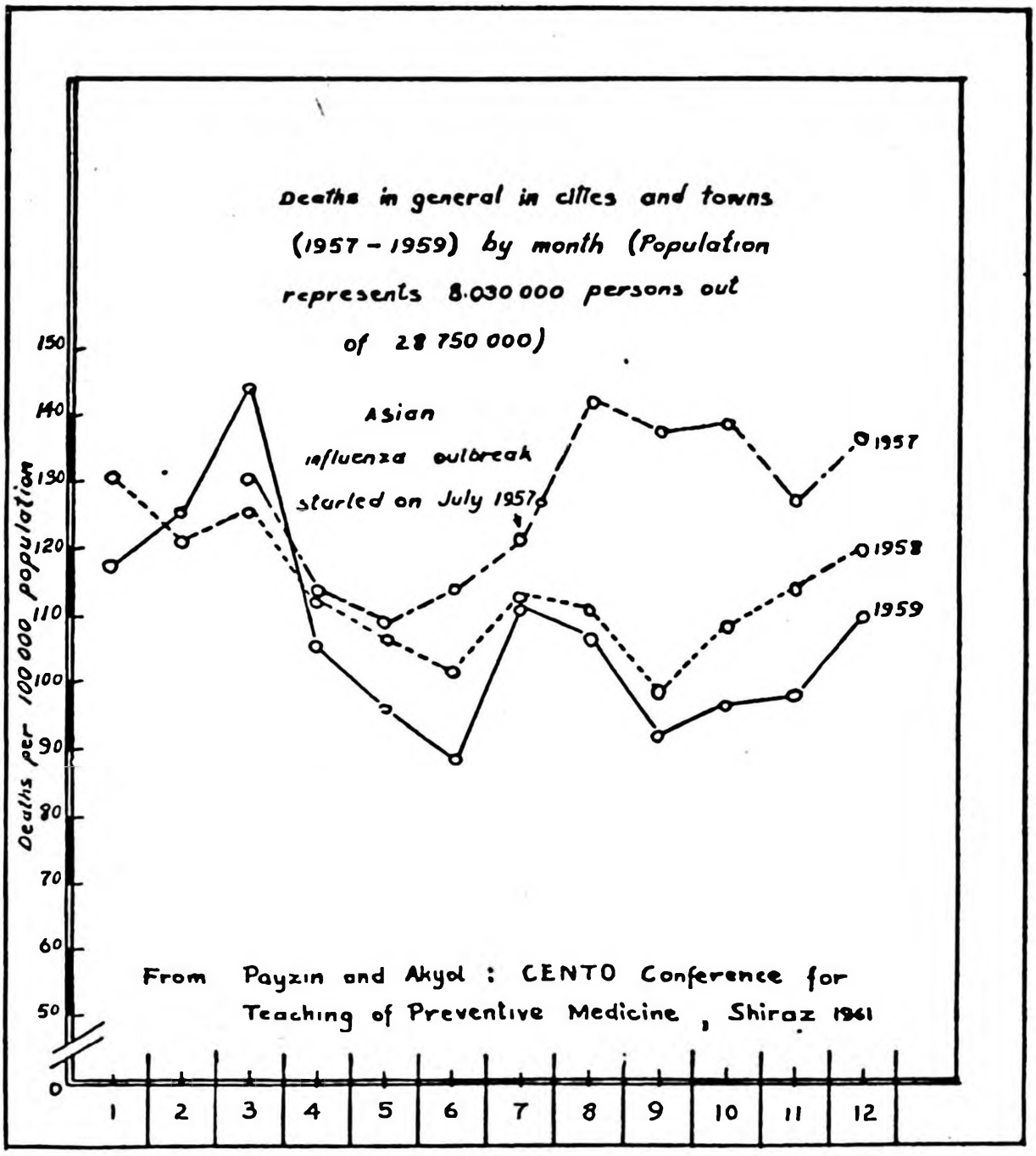
Deaths in general in cities and towns (1957 - 1959) by month (Population represents 8.030 000 persons out of 28 750 000)
Asian influenza outbreak started on July 1957
1957
1958
1959
Deaths per 100 000 population
150
140
130
120
110
100
90
80
70
60
50
0
1
2
3
4
5
6
7
8
9
10
11
12
From Payzin and Akyol : CENTO Conference for Teaching of Preventive Medicine , Shiraz 1961

Figure 1.

Asiatic flu entered Turkey in June 1957 and the government decided that influenza cases should be reported. In August, 53,565 cases, in September, 106,970, and in October, 128,277 cases were reported. In November, 50,580 cases and in the following months, 17,587, 10,088, and 2188 cases were reported. The epidemic caused a considerable number of deaths (see figure 1). Payzın, et al [8, 9] isolated a Q phase strain of A_2 virus from an influenza patient who showed signs of mental confusion, and it was codified by WIC as A/Turkey 515/57. Some 41 strains were later isolated by Berke and Arı and Özlüarda. [10] Different kinds of complications of influenza, including many cases with psychiatric syndromes, were observed during the height of the epidemic.[8] In the winters of 1958 and 1959, A_2 virus (9 strains) was isolated by Berke and Özlüarda.[11] In 1960, A/Turkey 1/60 virus was isolated and a rise of B antibodies was also detected in some human sera.

No influenza epidemics were recorded in Turkey during the winters of 1959 - 60 and 1960 - 61. In the winter of 1962 - 63, A_2 virus and B virus infections were recorded as sporadic cases (see table 3) with the complement fixation test, but no viruses were isolated.[12]

Other Myxovirus infections : No information is available on para influenza virus infections and hemoabsorbtion viruses.

Adenovirus Infections

Adenovirus infections should be common in this country. The first recognized adenovirus epidemic was recorded in the winter of 1957 - 58 and was due to adenovirus type 6. One strain was isolated from an influenza - like case with adenitis and conjunctivitis (Asst. Prof. K. Özsan himself, from our department was the case) by Payzın, and another strain was isolated by Dr. Arı [13] and classified as adenovirus type 6 by the Virus Reference Laboratory, in Colindale, London. The last strain was isolated from a mild epidemic in a school dormitory where 72 cases of common cold and angina were reported.

Another mild epidemic due to adenoviruses was recorded in the winter of 1959 - 60 in Ankara. It was proven by serological tests, but no strains were isolated.[11] According to Özlüarda,[12] in the winter of 1962 - 63 all attempts by the National Influenza Center in Ankara to isolate adenoviruses failed and 271 sera were found negative for adenovirus antibodies with the complement fixation test out of 530 sera tested (see table 3).

Psittacosis Infections

An extensive serological survey was carried out by Sezen [14] for psittacosis with the complement fixation test and using sera obtained from many parts of Turkey. The results obtained are summarized in table 3.

TABLE 3

C. F. TEST RESULTS WITH PSITTACOSIS ANTIGEN IN HUMAN AND PIGEON SERA

Sera Tested	Number Tested	Total Positive	Titers of Positives					Per cent Negative Sera
			8	16	32	64	128	
Human sera (male)	1317	67	32	21	7	7	0	95
Human sera (female)	682	40	16	14	3	4	3	94
Pigeon sera wild-domestic	211	37	2	5	6	11	13	83

From Sezen, Ref. 14

Berke, et al [13] in 1958 tested 464 sera for psittacosis with the complement fixation test and 66 sera were positive in a titer of 1 : 8, and 26 in a titer of 1 : 16. One of the two cases of atypical pneumonia was found positive for psittacosis in a titer of 1 : 32 with the complement fixation test. It seems that psittacosis infections are very rare in this country, in spite of the use of psittacinae birds as house pets.

Q Fever

Very extensive research was carried on by Payzın [15, 16, 17, 18, 19] and others[20, 21, 22] on different aspects of Q fever in Turkey. According to the results of serological surveys and C. Burnetii isolations, Q fever is endemic among human beings and animals. The most recent survey is being carried out by Payzın and Akan [23] in 1963 using the micro agglutination slide test with sera obtained from patients in Central and Eastern Turkey. Out of 361 sera, 32 per cent were found positive for Burnetii, with higher rates in the Van, Diyarbakır and Ağrı regions in Eastern Turkey.

ECHO Viruses

In 1958, an epidemic of ECHO 6, 9 and 10 viruses was observed in Ankara, and Payzın and Ege[24] isolated many strains especially from cases showing the aseptic meningitis syndrome. No work has yet been published on the relationship between the ECHO viruses and respiratory viruses in Turkey.

Situation in 1963 : Özlüarda recently tested some sera for influenza, adenovirus, psittacosis, and Q fever antibodies using the complement fixation test. [12] The results are summarized by the author in table 4.

TABLE 4

RESULTS OF COMPLEMENT FIXATION TESTS OF 602 SERA TESTED FOR INFLUENZA, ADENOVIRUS, PSITTACOSIS AND Q FEVER ANTIBODIES

Number of Sera	Source of Sera	Antigens	Number of Negatives	Percent Positive	Titers of Positives		
					1 : 8	1 : 16	1 : 32
72	Atypical Pneumonia Cases(*)	Infl. A	68	5,5	3	1	0
		Infl. B	70	2,5	2	0	0
		Psittacosis	64	11	3	0	5
		Adenovirus	56	22	11	3	2
		Q Fever	52	27,7	16	2	2
530	Sera from healthy persons(**)	Infl. A	257	52	175	68	30
		Infl. B	426	20	91	12	1
		Adenovirus	378	29	65	52	35
		Q Fever	320	40	137	60	13

(*) Sera from city people, (**) Sera from all over Turkey (mostly peasants)

This table describes the endemic nature of respiratory viruses in Turkey and clearly indicates that the most prominent causes of acute upper respiratory infections are Q fever, adenoviruses and influenza. The table also indicates that normal sera (mostly from village persons) have very high antibody titers.

Summary

Data are presented for the etiological agents and antibodies for respiratory infections in the different communities of Turkey. Q fever and adenovirus infections are common diseases when there is no epidemic of influenza.

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