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THE RESULTS OF THE INFLUENZA EPIDEMIC
OF 1891-92, AS SEEN IN THE ROYAL
INFIRMARY, EDINBURGH.

The Results of the Influenza Epidemic of 1891-92,
as seen in the Royal Infirmary, Edinburgh. By
A. Lockhart Gillespie, M.D., F.R.C.P.Ed.

No report of the number of cases treated during the past year would be complete without a record of the statistics of the influenza epidemic, which so severely tried our city in the months of November, December, and January. Precluded from taking notes of the cases personally by the rules of my office, I must here thank the physicians of the different wards for the facilities afforded me in gathering together the following facts.

The first case observed occurred during the third week of October, the last on September 27th. The end, however, of the disease, in true epidemic form, took place about the middle of February, only a few sporadic cases occurring afterwards. It is interesting to note here that the first case which was admitted during the winter 1889-90 into the hospital was recorded in the third week of December; the epidemic was most marked during the first and second weeks of January; while I find a case chronicled as occurring in the last week of June. In 1890-91 the epidemic assumed a very different character; the first case was noted in the third week of November, while the height of the epidemic was not marked until June—indeed, isolated examples of the disease were admitted throughout the year.

This year the disease was at its height throughout the whole of November 1891, and during the first week of December. The numbers during the later weeks of December diminished somewhat, rose again in January, and finally fell in the second week of February.

The statistics of the disease may be divided primarily into four classes:—(1) Cases among the medical out-patients; (2) Members of the nursing staff affected; (3) Patients admitted

to hospital with influenza, or sequelæ; (4) Patients already in hospital for other complaints, and who were attacked by influenza.

	Total.	Cure.	Improved.	Death.	Mortality.
Out-patients, . . .	86	—	—	—	—
Staff,	37	37	—	—	—
Admissions, . . .	115	90	11	14	12.1%
Intercurrent, . .	54	49	—	5	9.25%
Totals,	292	176	11	19	9.2% ¹

¹ Out-patients not included.

CASES AMONG THE STAFF.

Thirty-seven nurses and ward assistants were attacked; the first on October 30th, the last on December 11th. During the last two days of October, 4 cases occurred; in the first week of November the number rose to 17, in the second it fell to 6, and in the third to 2. During the next three weeks 8 scattered cases occurred. Probationer nurses suffered most severely, 12 being attacked; the ward assistants supplied 10 of the remainder, of whom 7 were night nurses, the others staff nurses.

The cases were all mild; 2 only had a simple rise of temperature, 23 arthritic pains, 8 bronchitis, and 1 gastric symptoms as well. Two had short sharp attacks of lobar pneumonia, while pleurisy complicated one case.

In 16 cases the temperature did not rise above 100°, in 15 above 102°·1, in 5 above 104°, and in only 1 case above that figure. In 19 the temperature fell on the second day, in 9 on the third, 4 on the fourth, 3, 2, and 2 on the fifth, sixth, and beyond the seventh respectively.

Of the two pneumonia cases, not included in the general pneumonia analysis on p. 252, in one the left apex was affected, the crisis occurred on the eighth day; temperature, 104°·6. In the other, the consolidation affected the right base, the temperature fell on the third day; temperature, 103°·6. Both were slight cases, with irregular temperatures and indefinite physical signs.

PATIENTS ADMITTED WITH INFLUENZA.

One hundred and fifteen cases of influenza and its sequelæ were admitted, 72 males and 43 females; 14 of these died, or 12·1 per cent. The first case was registered during the third week of October, the greatest number in the fourth week of November, and scattered cases thenceforward throughout the year.

The following types were observed among the cases:—

	Males.	Females.
Simple,	5	11
Arthritic,	6	4
Respiratory,	51	24
Anomalous,	10	4

Of the respiratory type, 41 males and 11 females had pneumonia, 9 males and 11 females bronchitis, and 3 patients acute pleurisy.

In the analysis of the pneumonia cases for the year, printed in this volume, the details of the majority of those due to influenza are given. One case, however, which occurred in a medical student, is not entered. Besides the consolidation of the lungs, he had an early acute cerebro-spinal meningitis, as shown by a post-mortem examination.

Two cases of capillary bronchitis with influenza died.

Of the cases which do not come under the first three heads several were of an interesting character.

A male, æt. 31, admitted on 24th December, died of coma, probably produced by influenzic meningitis. Another male came in on 26th January, who, after an attack of influenza a short time previously, had suffered from short daily attacks of shivering, accompanied with copious sweating, but no rise of temperature.

Two men and one woman were admitted with dementia following an attack, another male patient with melancholia of a similar origin.

A female, æt. 44, admitted on 20th May, presented all the signs of an ascitic effusion. No cause for this could be discovered, save the possibility of it having been caused by a precedent attack of influenza. The fluid disappeared very

rapidly, and it was supposed that its presence was due to some vasomotor disturbance of the adjoining blood-vessels.

Two patients developed acute pericarditis, one with severe diarrhœa at the same time.

A male patient, with a very high temperature, passed a large quantity of blood in his urine for two days. He recovered speedily.

Two male and two female patients exhibited marked post-influenzal debility.

PATIENTS ATTACKED WHILE IN HOSPITAL.

Only 54 cases were reported to have occurred among patients already in the medical house suffering from other complaints. Of these, 5, or 9·25 per cent., died.

The distribution of the different types was as follows:—

	Males.	Females.	Total.
Simple,	6	6	12
Arthritic,	13	6	19
Respiratory,	5	6	11
Anomalous,	7	5	12

The height of the temperature was recorded in 42 cases. It did not rise above 100° Fahr. in 5, above 101° in 5, nor above 102° in 6. In 17 it lay between 102°-103°, in 8 between 103°-104°, and in 1 case it rose above 105°.

The fever lasted on an average for ten days, but in 2 the temperature fell after twenty-four hours, in 1 after forty-eight hours, in 7 after three days, and in 6 after four days.

Of the individual cases belonging to the first two types, nothing need be said. Of the third, 2 developed lobar pneumonia, the rest bronchitis.

Some peculiar effects of the influenza poison were noticed among the last class.

On 6th November, a female patient, æt. 20, who was suffering from both diabetes mellitus and exophthalmic goitre, became worse, her temperature rose to 102°·2, and she complained of great pain in the head. The sugar in her urine increased largely in amount, she developed diabetic dyspnœa, and died on the fourth day of the attack. On post-mortem,

recent pleuritic and meningitic inflammations were found in addition to the goitre.

On 9th November, a female patient in the same ward, who was also suffering from diabetes mellitus, was attacked. Her temperature ran quickly up to $103^{\circ}\cdot4$, with headache. She became cyanosed, dyspnœic, and died on the third day. The sugar in her urine increased in amount coincidentally with the rise in temperature.

Another female case, chronicled on p. 276, had cerebro-spinal meningitis and herpes.

A male patient in another ward, also suffering from diabetes mellitus, took influenza on 12th November. He had a rigor, vomited, his temperature rose to $100^{\circ}\cdot8$, and there was a great increase in the sugar found in the urine. He recovered after seven days from the attack.

A boy, who was in hospital with a peculiar form of epilepsy, was attacked on 3rd November. His temperature ran up to 105° . He complained of great pain in his head, he was mentally duller, and the fits, which had almost ceased, increased greatly both in intensity and frequency. The fever subsided on the seventh day.

On 28th December, a male patient with mitral stenosis was attacked. Cerebro-spinal meningitis developed, and caused death.

Four cases of phthisis were attacked; in all the temperature became more markedly irregular, rigors and copious sweatings occurred, and generally well-defined extensions of the tubercular area could be detected.

The disease took very much the same form in all cases of anæmia and chlorosis attacked, a moderately high temperature, with severe pains and great consequent weakness. In one patient a well-marked, but temporary, hemianæsthesia developed. In two in which the anæmia was thought to be due to digestive troubles, perhaps gastric ulceration, severe gastrointestinal irritation, was evidently present from the vomiting and purging observed.

With regard to the subject generally it will be seen that, considering the severity of the epidemic as experienced outside the hospital, wonderfully few cases occurred within its walls.

Of course many patients with other diseases were probably admitted who owed, in some part at least, the origin of their malady to an antecedent and perhaps overlooked attack of influenza.

At the commencement of the year I hoped to be able to obtain a sufficient number of cases to allow of some reasonable deductions being made. Nearly all the published reports on influenza are variations on one theme, the recorded death-rate. More valuable would be a series of observations, such as could only be made in an institution like the Royal Infirmary, on the different types, and sequelæ. Fortunately for the patients, unfortunately for the results, only a few cases occurred in the medical house. That all the cases which originated in hospital are recorded in this paper there can be little doubt; for the attacks were always plainly and graphically expressed on the temperature charts, and could not be overlooked. In those cases in which the temperature during the course of the original disease was high or irregular, it became markedly more so, while in those with a steady and normal temperature beforehand it often rose little and regularly during the influenzal attack.

The influence of the poison on all tissues already inflamed is very marked. The tubercular areas in phthisical lungs extend. The sugar in the urine of diabetics increases. An epileptic has an increase in the number and severity of his fits. A chronic case of cirrhotic kidney develops an acute attack. A patient with perityphlitis, almost cured, has a return of his abdominal pain along with the other symptoms of influenza.

The affection of the influenza poison for serous membranes is well known. In 4 cases of influenza, cerebro-spinal meningitis was discovered post-mortem, and in 3 others, on which no examination was made, its presence was probable. Several cases of bronchitis developed acute pleurisy during an attack, and in the one fatal case necrotic areas were found in the lung, along with some consolidation. Three cases of heart disease became complicated by pericarditis.

The vasomotor mechanism did not escape; copious daily sweatings and rigors, with little or no change of temperature, and "neurotic" ascites illustrated this form.

Those attacks which occurred in anæmic patients were, as a rule, of no great severity, chiefly manifesting themselves in arthritic pains, with consequent weakness; in some anæmic patients, indeed, the weakness was very pronounced. One chlorotic girl developed a hemianæsthesia during the attack.

Bringing together the numbers of the different types from the four classes, the cases among the out-patients being included, the following table may be constructed:—

	Total.	Simple.	Arthritic.	Respiratory.	Various.
Out-patients, .	86	12	24	34	16
Nursing staff, .	37	2	23	11	1
Admissions, .	115	16	10	75	14
Cases in hospital, .	54	12	19	11	12
Totals, . . .	292	42 or 14 %	76 or 26 %	131 or 44 %	43 or 14·5 %

The following chart shows clearly the period at which the epidemic was at its height. The curve is very characteristic:—

