

All it changes nothing changes for the COVID 19 epidemic

Introduction

An outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) started in December 2019 in China and was declared a pandemic on 11.03.2020 by World Health Organization (WHO)¹.

Globally the WHO, on 22.04.2020, communicated 2.471.136 confirmed cases and 169.006 deaths². To face this epidemic we are not in a different situation than in another period of our history when we had to manage the Spanish flu during the first world war.

We do not know this virus, the characteristics of its disease, which drugs might give relief to patients and we do not have a vaccine.

In other words we do not have nothing, we are in the same situation as during the other outbreaks.

Nowadays we can rely on preventive measures as:

- physical distances of 1,5 meter
- masks and gloves
- to measure body temperature at the entrance of closed areas (it must be lower than 37,5°)
- to ensure disinfection rules in public contests as transports, shopping areas, schools, universities
- protect healthcare workers with appropriate Personal Protection Equipment (PPE).

Chiefs of Government and Ministers of Health, Scientific and Technical Committees, all over the world, have different positions for the adoption of preventive measures to stop the contagion and, on media, we can observe discussions upon the use of masks, the introduction of a lockdown, the closure of the schools and universities as we can read in the documents during the Spanish influenza epidemic.

Is there something new?

The aims of this paper is to describe and discuss the approaches to a epidemic by comparing the the SARS-CoV-2 epidemic and the Spanish flu.

Alert or normality? The Spanish flu in the "chronicles" of Milan (1918-1919)

In Milan, *whispers* around the *Spanish gripe* provoked an official intervention by Guido Bordoni-Uffreduzzi (1859-1943), who was the head physician of the Municipality.

The war censorship was still in force and the form of the interview was chosen, published in *Corriere della Sera*, one of the most authoritative Italian newspapers of the time, which was printed in Milan³.

The long article dealt with the subject of the health condition of the city, beginning to minimize the mortality numbers, which had alarmed the population.

The Milanese doctor referred them mainly to other gastrointestinal pathologies.

However, when asked specifically about the *gripe*, the interviewee could not minimize the situation.

It was a real *pandemic*, while the cases that had been previously observed were defined as *sporadic*.

As an example of a previous pandemic, Bordoni-Uffreduzzi recalled the flu pandemic of 1889-1890.

Stopping the course of the flu was not possible because of the rapidity of its propagation; the aim was to limit its spread.

At a collective level it was proposed to isolate the sick, avoid crowding, especially in communities, and disinfect the environments.

At the individual level, it was proposed to avoid contact with the sick and convalescents, unnecessary displacement and travel, while trying to maintain daily life habits as much as possible. It was recommended to wash hands several times a day and to protect the oropharynx in some way with mildly disinfectant mouthwash.

At the beginning of October, a blurb reported, anonymously, positions of strong downsizing about the importance of the phenomenon: it was nothing new; it was a normal flu; mortality was not high and weak or *predisposed people were affected*⁴.

Among the drugs available, the first mentioned were quinine and aspirin.

The literature of the time reports that in the Italian cities were attempted therapies based on preparations of garlic, iodine tinctures, small doses of phenic acid, camphor, preparations with cinnamon oil (cinnamon), salvarsan, castor oil, sodium bicarbonate, sodium citrate, but all were unsuccessful. Even bloodletting reappeared, repudiated by doctors at the end of the 19th century, with negative results, especially when it was used in patients with pneumonia secondary to influenza. The impotence was so great that, after examination of the measures taken with ineffective results, the conclusions were that the same results could be obtained with the simplest of treatments: the abundance of air in the environment in which the patients are located⁵.

If the central government was issuing these urgent calls to minimize the situation, at the Milanese level the situation was quite different and two articles in the same issue of the newspaper demonstrate this.

The first one gives us an overview of the organizational state of the city's health care at the limits of the crisis: there was a lack of doctors on the territory; the reporting of cases was difficult; the mortality rate had risen to 150 cases in one day; burials were hindered by the lack of personnel; long lines of people were formed in public offices⁶.

In the second article, in spite of a further government attempt to minimize the seriousness of the situation, further measures were announced: the closure of the cinemas, the lengthening of the opening hours of the service of pharmacies, the increase in health personnel thanks to the collaboration of doctors and military pharmacists⁷.

At the city level, it was proposed the improvement of medical assistance at home; the recall of retired doctors into service; the precepting of freelance professionals; the systematic and regular disinfection of public offices, meeting places and theatres. In schools, the agglomeration of people was to be avoided and classes and examinations were to be postponed.

The estimated number of cases in the city, in the absence of precise surveys, was 70,000 people; this number was indicated as an index of the *benign course* of the disease; however, a Military Hospital (in Piazza Fratelli Bandiera) had been converted into a civilian hospital, employed by the Ospedale Maggiore.

The Hospitaller Council, the Military Health Service and the City Council had in fact entrusted the Medical Directorate of the Ospedale Maggiore in Milan with the operation of the military hospital (1200 beds) to admit patients suffering from influenza and its complications.

The new branch of the Ospedale Maggiore, operating since 28 September 1918, was then closed due to improved public health conditions on 28 February 1919.

Among the prophylactic measures taken by the Ospedale Maggiore, even before the epidemic climax in October, we remember not only the grouping of patients in special infirmaries, but also the suspension from 25 September 1918 of public visits on Wednesdays, and from 6 October the following Sunday, together with the regular disinfection of hospital premises frequented by the public (reception and permit offices, atria, porticoes and churches).

On October 3, 1918, visits to the sick were prohibited, even to the seriously ill, and the use of toothpaste and disinfectant nasal solutions was proposed, as already experimented on military personnel; it was also thought to activate the disinfection of the churches^{8,9,10}.

Among the foreign scientific news, those coming from the Allied nations were privileged, also for propaganda reasons. From Paris it was reported, with reference to the epidemic of 1889-1890, that *The course of the two epidemics is identical: benign cases at the beginning; further pulmonary complications; intestinal complications that often assume the characters of dysentery; extreme contagiousness of the disease, to which the medical and hospitalier corps pays a serious tribute [...]*¹¹

On October 6, 1918 visits to guests of the Pio Albergo Trivulzio were forbidden, while the closure of the bars and taverns had not yet been established^{12,13}.

The situation became more and more worrying and although the authorities tried to minimize the extent, health consultants, such as Luigi Mangiagalli (1850-1928), made them aware of the need to equip the care staff with adequate protective equipment: gags, gloves, as well as hand washing. It was decided to close the taverns in the evening, suspend the funeral processions, sound the bells, external funeral signs such as closing the doors as a sign of mourning, limited access to public transport. Visits to the Provincial Asylum of Mombello were also suspended¹⁴.

The subject of the dangers of transmission of the infection by those who *were ill without knowing it or are about to become ill* thanks to *coughing* or *sneezing* was always dealt with through news from the scientific circles of the Allied countries¹⁵.

A very important series of news was published on the 16th October, 1918: first of all, it was recognized the situation so serious as to impose measures of greater hospitalization and home medical assistance; the more than 1000 beds guaranteed by the reconversion of the Military Hospital of Piazza Fratelli Bandiera would not be sufficient and at least another 4000/5000 were requested¹⁶.

An experiment on the prophylactic efficacy of quinine was carried out on a sample of 700 healthy nurses from the Hospitalier Institutes of Milan (administering 2 tablets of State quinine salts every day for 15 days). However, it had no prophylactic action against influenza. It was recommended, however, not to divert quinine from its main use as an anti-malarial agent.

From September 1918 to April 1919, according to the documents and statistical health reports of the Ospedale Maggiore we consulted, there were: 5,684 inpatients (2380 males; 3324 females); healed 4,198; deceased 1,486; mortality 26.14 %; days of hospitalization 89,414; average individual hospitalization 15.73^{17,18}.

Let us remember that the population of Milan in 1918 amounted to 688,000 inhabitants.

As for the care personnel of the Ospedale Maggiore, they carried out their activities with self-sacrifice, even though the first deaths were already reported, in addition to a considerable number of sick people.

On October 20, 1918, the Pio Albergo Trivulzio made its structure available to receive people suffering from the flu; the problem to be solved was mainly that of the wise choice of the sick to be transferred:

*This will allow to immediately send a thousand sick people, choosing them among those whose hospitalization is more advisable, both for their own conditions and for those of the family and the environment in which they live*¹⁹.

On November 8th the measures were relaxed, but at the end of the year, on December 29th, news was given of a possible rekindling of the epidemic.

On 31 December 1918, faced with the resumption of the epidemic, the previous restrictions were reintroduced, and the problem was raised of an increase in the number of public transport services to allow for less crowding in the vehicles.

A few days later, in addition to ventilation, it was prescribed that no passengers could travel standing up²⁰.

However, the problem of contagion within families remained unresolved: in an interesting article dated January 3, 1919 it was claimed that

*Every house where there is a sick person becomes an outbreak of infection, which is generalized in the family and spreads outside [...]*²¹

On January 6, 1919, an advertising insert gives us news of the possibility of using *a very light silk gag-mask with a very pleasant antiseptic liquid [...]* In some American cities it has even been imposed on citizens who want to circulate, and it would be very opportune that in Italy, too, the numerous victims of the widespread contagion be avoided in the same way²².

In a long letter, in which Serafino Belfanti (1860-1939) made available the vaccine prepared by the Milanese Serotherapeutic Institute, he correctly framed the problem of influenza from the scientific point of view: he stressed the hypothesis that it could be a virus, the data of epidemic upsurge and increased mortality, the need for the use of masks, the importance of vaccination²³.

These ideas were presented by him on 18 January 1919 to the Milanese health association with the proposal to carry out multicentric and even comparative studies with epizootic diseases²⁴.

Immediately started the initiative of injections, stressing the need for the collaboration of the public in maintaining correct hygienic attitudes²⁵.

On a daily basis, bulletins are published with data from the epidemic, which show a trend towards exhaustion.

The positions of the central authorities are reconfirmed, always tending to minimize the phenomenon²⁶.

On 18th February 1919, it was announced that no case of influenza had been reported.

Thus, on the 25th March, the Festa del Perdono (Feast of Forgiveness) at the Ospedale Maggiore could take place as usual, with thanks for the activity carried out by the health personnel and the memory of those who had sacrificed their lives²⁷.

At the end of April (on the 27th and 28th) a medical conference dedicated to influenza took place: the discussion was now the responsibility of the scientists²⁸.

Wear a mask!

The BMJ of November 2, 1918 referred on the report presented by the Committee appointed by the Paris Medical Academy for the prophylaxis of influenza²⁹. They consist of personal hygiene measures, as mouth washes and gargle twice a day with a glass of warm water added with a solution of chlorinated soda, and of population ones, as prevention of overcrowding and washing and disinfection of tramways and railways carriage, school closure. In the same paper also of indications about what should be done in hospitals are given summarized as follows:

- reduction in the number of beds;
- creation of specific wards by separating the most serious (complicated) from the least serious cases: complicated cases, in turn, grouped, if possible, according to the type of complication;
- separation of beds with curtains or other barriers;
- discharge policies aiming at not discharging convalescents but keeping them under observation in facilities adjacent to hospitals;
- periodic disinfection procedures for wards and environmental sanitation (“destruction of sputa”);- firm discouragement of visits;
- prescription of conduct staff must follow in order to protect them from infection and prevent them from becoming potential vehicles of infection; therefore they must behave according to specific measures for dressing, antiseptics of the hands and nasopharynx;
- separation of all patients with symptoms in an outpatient setting;
- ambulances’ disinfection.

In relation to the masks used in American hospitals, they are recommended if made with "half a yard of gauze, folded like a triangular bandage, covering the nose, mouth and chin, and tied at the back of the head".

As mentioned, they were widely used in hospitals in the United States, but later their use was extended to the general population until they were imposed as in the case of the city of San Francisco³⁰. A video shot in the same year in which the end of the First World War is celebrated, shows a festive population gathering which, however, strictly respected this obligation ("Obey the laws and wear the gauze. Protect your jaws from septic paws"). The Stanford University website quotes both the results of a study published in JAMA that reported a rapid decline in the number of cases of influenza among those wearing the mask, and the results of a research conducted in the Great Lakes region that did not show similar success³¹. In fact, there was a small difference in the development of the disease between hospital staff who wore them and those who did not (8% vs. 7.5%) in favour of the latter. As far as Italy is concerned, Riccardo Chiaberge in the volume 1918 The great epidemic quotes the Florence medical clinician Ferdinando Micheli who in "L'Igiene e la vita" (Hygiene and life) of the same year recommends as an individual initiative measure "a mask made with four or five sheets of dry paper to defend oneself from the nose-farngo-bronchial secretions that patients leave talking"³².

Conclusions

It's not just assonances with the 1918-1919 flu pandemic, but an absolute coincidence.

Coincidences both in the general unpreparedness, in the attitudes of the population and the authorities, and in the different strategies between central and peripheral authorities.

As for the measures to be taken, all those adopted in 2020 were in 1918-1919, with the same sequence of progression, uncertainties, early loosening and hasty reversals (going back on own footsteps?).

Even from a scientific point of view all the elements had already been understood.

All the problems, such as, for example, social distancing, intrafamily spread, personal protective equipment, types of drugs (quinine, aspirin, anti-inflammatories, etc.), the need for vaccination, etc.. had already been detected and addressed by the means of the time.

Of course, the current availability of technology has made and continues to make a difference.

As far as the epidemiological data present in the health-statistical reports of the Ospedale Maggiore in Milan, they are related to: period to be considered (September 1918-April 1919); hospitalized 5,684; healed 4,198; deceased 1,486; mortality (on the hospitalized population) 26.14 %.

The mortality rate, on the entire population susceptible to influenza, would have been 0.26% (population of 688,000 inhabitants in Milan in 1918).

Assuming that in Spanish flu times there was a mortality rate on the susceptible population between 1 and 2%, similar to today's Covid 19 (taking into account the fact that in both cases was not and is not available a vaccine), the deaths would have been between 5,700 and 11,400.

In any case, to accurately estimate the number of deaths would need to know the excess mortality in the municipality of Milan, compared to the previous year.

The 1918-1919 pandemic certainly led to vast improvements in public health. In fact, several strategies, such as health education, isolation, hygiene and surveillance, have improved our knowledge of influenza transmission, and are still implemented today to try to stem the spread of a disease such as the Covid 19 pandemic, which, like the Spanish pandemic, has a heavy burden.

For the current pandemic, we would have to discuss not only in terms of communicating the pandemic to the population, hospitals dedicated to Covid (such as lazarettos?), reopening the

various sectors (school, work, etc.), but also what has been done today, strategies (of all kinds) addressed in the wrong way, despite the current scientific, technological knowledge, etc.

References

- 1- WHO. Coronavirus disease 2019 (COVID-19) Situation Report – 51, 11 March 2020, https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200311-sitrep-51-covid-19.pdf?sfvrsn=1ba62e57_4
- 2-https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200422-sitrep-93-covid-19.pdf?sfvrsn=35cf80d7_4
- 3-Tifo e “grippe” spagnola, Corriere della Sera, 19 settembre 1918, p. 3.
- 4-La salute pubblica in Italia, Corriere della Sera, 02 ottobre 1918, p. 2.
- 5-S. Sabbatani, S. Fiorino, La pandemia influenzale “spagnola” / The “Spanish influenza” pandemic. *Le infezioni in Medicina* 2007; 15 (4): 272-285.
- 6-La denuncia dei casi d’influenza, Corriere della Sera, 02 ottobre 1918, p. 3.
- 7-La lotta contro la malattia, Corriere della Sera, 02 ottobre 1918, p. 3.
- 8-L’influenza, Corriere della Sera, 03 ottobre 1918, p. 3.
- 9-L’«influenza» fra i militari, Corriere della Sera, 03 ottobre 1918, p. 3.
- 10-I provvedimenti contro l’influenza, Corriere della Sera, 04 ottobre 1918, p. 3.
- 11-Una seduta sull’influenza all’Accademia di Medicina di Parigi, Corriere della Sera, 05 ottobre 1918, p. 2.
- 12-L’influenza, Corriere della Sera, 11 ottobre 1918, p. 3.
- 13-L’influenza, Corriere della Sera, 13 ottobre 1918, p. 3.
- 14-L’offensiva contro l’influenza, Corriere della Sera, 15 ottobre 1918, p. 2.
- 15-Nuovi provvedimenti contro l’influenza, Corriere della Sera, 16 ottobre 1918.
- 16-Gli Istituti ospitalieri di Milano dal 1914 al 1921. Rendiconto sanitario - statistico. La morbilità classificata per età, sesso, professione, provenienza, esito, durata, a cura del direttore medico prof. Enrico Ronzani. In: *Archivio Ospedale Maggiore (AOM), Amministrazione, Beneficenza, Statistiche a stampa (Beneficenza 31)*
- 17-*Archivio Ospedale Maggiore (AOM), Registri di accettazione, 1918*
- 18-L’influenza, Corriere della Sera, 20 ottobre 1918, p. 3
- 19-norme igieniche sui trams, Corriere della Sera, 03 gennaio 1919, p. 3
- 20-Il vero pericolo nell’epidemia, Corriere della Sera, 03 gennaio 1919, p. 2
- 21-Echi di cronaca, Corriere della Sera, 06 gennaio 1919, p. 3
- 22-Contro l’influenza. Una generosa offerta dell’Istituto Sieroterapico Milanese, Corriere della Sera, 10 gennaio 1919, p. 3
- 23-La conferenza del prof. Belfanti sull’influenza, Corriere della Sera, 19 gennaio 1919, p. 4
- 24-Per le iniezioni contro l’influenza, Corriere della Sera, 11 gennaio 1919, p. 3
- 25-La lotta contro l’influenza e la collaborazione del pubblico, Corriere della Sera, 14 gennaio 1919, p. 3
- 26-Le morti per influenza secondo il comm. Lutrario, Corriere della Sera, 18 gennaio 1919, p. 4
- 27-Una festa gentile all’Ospedale, Corriere della Sera, 26 marzo 1919, p. 3
- 28-Il convegno dei medici sull’influenza, Corriere della Sera, 29 aprile 1919, p. 3
- 29-French advice on the prevention of influenza mortality. *BMJ*; 1918 Nov 2 (3018); 496
- 30-<https://virus.stanford.edu/uda/fluresponse.html>
- 31-<https://www.youtube.com/watch?v=sHK3oWpD5ZI>
- 32-Chiaberge R: 1918 La grande epidemia. 2016. De Agostini Libri. Novara