

The Role of Learned Pharmacology Societies during the COVID-19 epidemic-experience of the Italian Society of Pharmacology

A. Grolla¹, G. Sava², G. Racagni³

¹ University of Piemonte Orientale, Novara, Italy

² Coordinator of communication of Italian Society of Pharmacology, Milan, Italy

³ President of the Italian Society of Pharmacology, Milan, Italy

E-mail: giorgio.racagni@unimi.it

The SARS-CoV-2 pandemic causing COVID-19 took all humanity by surprise and, in particular, the scientists who found themselves managing an attack and infection without any reference to either its etiopathology or therapeutic management. At the outset, when the infection seemed to be located in a specific region of China, Italy thought it could avoid contagion by the restriction of passenger flights to and from China, but it soon became evident that it would not be enough to ground planes to prevent the pandemic from spreading the virus. Within a short period of time, Italy discovered an initial outbreak of infection in a small village in Lombardy, which was rapidly followed by another in the Veneto region. Italy quickly became the second-placed country in terms of numbers of infections and deaths due to COVID-19.

Apart from the initiatives to contain the infection with lockdown measures, it immediately became important to have information on possible therapeutic tools to treat infected patients and, above all, the pathological consequences of the infection, especially bilateral interstitial pneumonia. Intervention by the Italian Society of Pharmacology (SIF) for the COVID-19 pandemic occurred in this context.

Founded in 1939, this scientific society representing pharmacology has over 1600 members in training institutions (universities), in public and private research institutions, and in pharmaceutical companies operating in Italy. SIF is affiliated to the European Federation of Pharmacology Companies and IUPHAR, the International Union of Pharmacological Societies.

From the start of the Italian pandemic, it was immediately evident that the SARS-CoV-2 virus and the pneumonia it caused were unknown from the pharmacological point of view and there were consequently no specific therapeutic or pharmacologic treatments. The data that came from China highlighted the use of drugs that had been repositioned from other pathologies and chosen on the basis of alleged or expected ability to impact COVID-19. SIF therefore decided to intervene and support health workers caring for infected patients, by making available their knowledge on pharmacology and drug therapy that might be relevant to COVID-19.

Health infrastructure was immediately reorganized to enable assistance to all patients who would need important medical interventions and to ensure there were sufficient numbers of intensive care units for the most serious cases. At the same time, sufficient personal protective equipment had to be made available to key personnel to protect themselves, uninfected patients, and ultimately the community. In parallel, the health situation was being significantly impacted, both positively and negatively, by information being made available in the media at the time. Indeed, the news and internet were flooded with information on potential drugs, hyping any hope. This often included preclinical drugs that would take years to arrive for patients and forgetting to highlight potential adverse risks.

It was clear that individual pharmacologists, members of the Society, played their part in national, regional, or local settings according to their competence and previous role in disproving or confirming pharmacological statements. However, it was not clear whether there was a role for a learned society in the management of the pandemic. The present commentary wishes to describe how academic pharmacologists, through their society, reacted and participated. While it is obvious that mistakes were most likely made and that SIF could probably have reacted more quickly at times, we

believe the overall experience was positive and worthwhile as a testimony for the future.

SIF immediately decided it wished to play a contributory role in fighting the pandemic. It found its place in communication and being at the interface between clinicians, regulatory agencies, the pharmaceutical industry, and citizens/patients. The communication team at SIF was already organizing a new webpage for the SIF website called "SIF Magazine", with the intent of communicating directly with citizens. The goal was to listen to citizens' requests, analyze the most clicked key words in Google related to the field of pharmacology, and to respond with a simple and easy to read article. This idea came about concurrently with the start of the COVID-19 epidemic in Italy and the SIF decided to accelerate the steps to arrive as soon as possible with a means to communicate in a timely manner with citizens about the health situation.

The first action taken was to set up an emergency task force that could identify the needs of its stakeholders/members and that could respond rapidly to those needs. Indeed, the SIF immediately activated a COVID-19 crisis unit among its members as volunteers, with the aim of acting as scientific support for health workers and to provide correct information on the use of medicines for the citizen.

On the SIF website, it is possible to access SIF Magazine (<https://www.sifweb.org/sif-magazine>) or COVID-19 (<https://www.sifweb.org/covid-19>), where all the documents written to sustain correct scientific information about the emergency are present. Among them, the SIF crisis unit promoted the publication of drug sheets on repurposing therapeutic agents against SARS-CoV-2, which were developed by experts in the field in consultation with the Technical and Scientific Committee of the Italian Medicines Agency, AIFA. In addition, many useful links have been posted on

the website to help the citizen find appropriate resources, such as AIFA and European Medicines Agency (EMA) homepages, and the Ministry of Health and Italian Civil Protection websites.

Once the SIF Magazine and COVID-19 links were activated, the information contained in these sites quickly became available to citizens and professionals, and numerous requests to share the two sites arrived, demonstrating the utility of the initiative. Interestingly, we were asked to translate the COVID-19 website into English so that it could be also shared by non-Italian-speaking scientists.

Not less important, SIF has always supported the young pharmacologists, sustaining their work and research with fellowships or travel grant for congresses, and during epidemic, SIF involved young in COVID-19 crisis unit. Moreover, young pharmacologists are part of a Facebook group which has been fundamental to diffuse scientific information about SARS-CoV-2 and to discuss about them with criticism.

Another important action was to put its press office available to the journalists of newspapers, radio and TV diffusions, in such a manner that they could have an authoritative, impartial opinion or explanation on any kind of pharmacological problem related to SARS-CoV-2 and COVID-19.

For this, interviews on tv or radio and press releases with expert pharmacologists of the Society were crucial. What does this experience teach us? Of course, scientific societies have a more important role than just keeping experts from a specific discipline in contact with each other.

The enormous interest generated by citizens in the popular content of the SIF Magazine highlighted the need for the availability of information from competent experts.

Similarly, interest in the drug datasheets published on COVID-19 has shown that even professionals felt there was a need to be able to access certified data on the drugs that they are using for therapy during the pandemic.

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