

# Ivermectin in COVID-19 Patients a Multicenter: Retrospective Study

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## Abstract

During 2020, many Medical Centers and solo Practitioners have adopted the I.D.E.A. protocol (Ivermectin, Dexamethasone, Enoxaparin and Aspirin) as the only inexpensive, effective, safe means to fight COVID infection. We hereby summarize the experience of some of these endeavors, stressing the fact that -by providing their patients with this protocol they have saved thousands of lives that, if not, would have been put in an unnecessary danger, or simple lost. We take into consideration the percentage of COVID + patients that required ulterior admittance, and also the death rate amid those admitted.

**Keywords:** Ivermectin; COVID 19; Dexamethasone; Infection

## Introduction

The COVID 19 (SARS COV2) pandemic implied a major challenge for Health Care. Though death rate amid those admitted at Medical Centres has slightly declined (partly due to the lower ages now affected), it remains disturbingly high [1,2] (Figures 1 and 2).

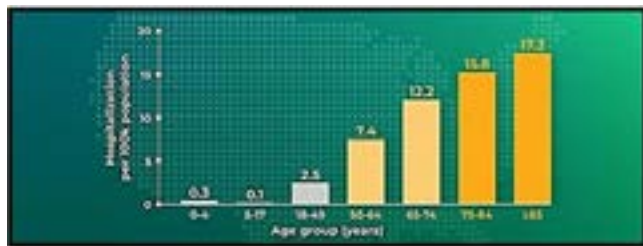


Figure 1: Rates of hospitalization for COVID, Related with patients age.

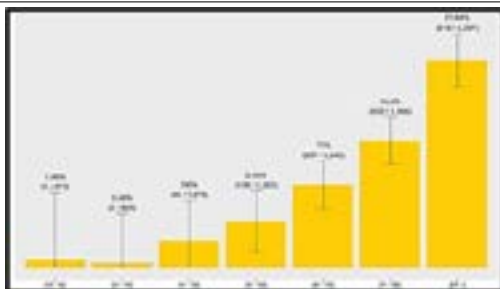


Figure 2: In-Hospital mortality related with patients age.

And, besides, the number of patients who test + and need ulterior admittance has stayed as high as it was at the beginning of the pandemic [3,4] (Figures 3 and 4).

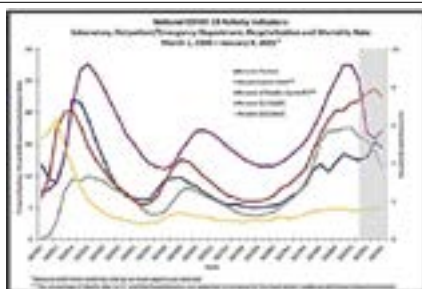


Figure 3: IOut-Patients and In-Patients indicators in USA during January 2021.

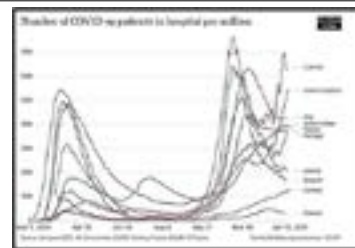


Figure 4: European COVID second wave.

What is more, the typical progress of those subjects admitted (Figure 5), and death rate among them is directly related to the type and magnitude of co-morbidities, the age of the patient, and the permanence in ventilator (Figures 6 and 7).



Figure 5: COVID evolution from early to final stages.

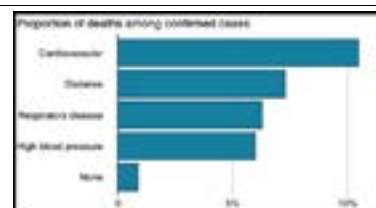


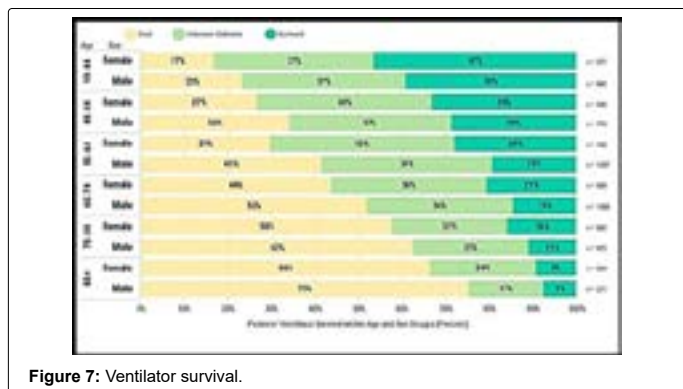
Figure 6: Deaths rates related to previous comorbidities.

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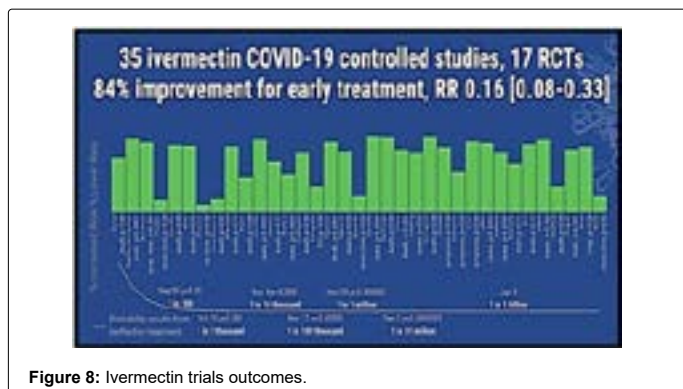
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Those facts have not only costed millions of lives, but have also spot lit an unpleasant reality: Health Authorities are not up to cope with this situation. From international entities (i.e.: W.H.O) to local ones (i.e.: NIH, CDC, NICE, and most national and minor offices) all of them have acted slowly, hesitatingly and –in many cases– prioritizing big pharma interests over ordinary people’s benefit. Thus, sanitary measures have come and go, with new concepts eclipsing old ones, over and over again. Expensive, unproven drugs have been preferred over repurposed, cheap ones. In this situation, new drugs have been greedily accepted, while repurposed drugs have been asked for more and more evidence, till the moment came when these last ones have almost 4 times more evidence that all other drugs, put together.

In this article, we gather the results obtained by a group of front-line Medical Doctors, working in different parts of the Argentina Republic, during the ongoing first wave of the pandemic. Ivermectin (IVM) is widely used all over the World as an anti-parasitic compound, and as a repurposed drug, it is proving to be more effective against COVID 19 than all the other drugs subjected to investigation [5-7] (Figure 8).



This article is not only intended to increase the huge amount of evidence, but also (and mainly) as a tribute to those brave Professionals, that have prioritized patient’s health over theirs.

### Materials and Methods

We will initially divide the outcomes according to the place where the cases were followed. Additionally, we will sum up all data, to reach a final, collective outcome. We include outcomes obtained in the Argentinian Provinces of Salta, Jujuy, Santa Fe and Buenos Aires, and the statistical treatment of that data, performed in the UK.

#### Salta, Argentina

Follow-up of 110 patients with COVID-19 (Figure 9).



Dr. Antonio Salgado led a follow-up of 110 patients with COVID-19 (diagnosed by rt-PCR) from them, 18 were under 18 years of age, and 92 were over that, with a mean age of 52-55, 95% of patients used IVM according to previously consensual dosage. All underwent intra COVID craniological control before and immediately post discharge. Only one patient had mild pericarditis, discovered when studies were performed. In routine laboratory checks, all were studied for troponin-CPK MB. Only one patient had alterations of that parameter 100% of the patients ‘evolution was favorable, without complications and without oxygen requirement, and/or need of admittance.

#### Jujuy, Argentina

Treatment of 130 patients with IVM (Figure 10).



Dr. Wilmer Bracho Colina started treatment with IVM in a total of

130 patients 46 were Health Care Personnel, previously diagnosed by rt-PCR. Only 4 of them developed mild/moderate symptoms from them, 3 didn't need to be admitted at Hospital, and the one who did, didn't need ICU assistance, being discharged a week later. The remaining subjects had an average age of 84, and were living in 2 Senior Houses. Only 4 subjects developed symptoms, and one had to be admitted briefly, as she was discharged 2 days later.

**Santa Fe, Argentina**

The observational study consisted of conducting a comparative analysis between the first 60 days of the pandemic in Correa, Sante Fe Province, a period in which IVM was not used, and the second 60 days of said pandemic in which IVM was used at the same location. This retrospective observation consisted of evaluating the patients regarding the need for hospitalization, lethality, and disease avoidance in close contacts medicated in both periods, as it would have occurred with two different arms, one medicated with placebo and the other with IVM (Figure 11).



Figure 11: santa Fe province (In Red) location in Argentina.

The IVM treatments in Correa began on September 25th and the observational study of cases was cut off on November 25th. In those second sixty days, it was confirmed the death of an 87-year-old man with previous heart disease and severe comorbidities who had been diagnosed with COVID ten days before, and was medicated with IVM for humanitarian reasons six days after the onset of symptoms. The patient suffered a sudden death, without evidence of respiratory failure. The cause of death remains uncertain. Even so, it is included in the statistics as death from COVID. During this 60-day stage, 311 COVID (+) patients were assisted, and the above-mentioned case was the only fatality, with no other case of severe symptoms and/or need of admittance.

**Buenos Aires, Argentina**

Outcomes obtained in the Argentinian Provinces, Buenos Aires (Figure 12).



Figure 8: Ivermectin trials outcomes.

**Scenery 1**

The initial trial on IVM (I.D.E.A.) was created by Dr. Hector Carvalho and Dr. Roberto Hirsch, and applied on COVID 19 patients at A. A. Eurnekian Public Hospital (duly submitted to the National Library of Medicine USA, NCT04425863) between May and June, 2020 [8], with Ivermectin solution at a relatively high dose (maximum 4 times over usual dose) to lower the viral load in all stages of COVID 19.

The so-called IDEA protocol was composed of:

Ivermectin, in progressive doses according to severity of cases.

- Dexamethasone 4 mg injection, as anti-inflammatory drug to treat hyper inflammatory
- reaction to COVID-infection
- Enoxaparin injection as anticoagulant to treat hyper coagulation in severe cases.
- Aspirin 250 mg tablets to prevent hyper coagulation in mild and moderate cases.

Except for Ivermectin oral solution, which was used in a higher dose than the one approved for parasitoids, all other drugs were used in the already approved doses and indications. Regarding Ivermectin safety, several oral studies have shown it to be safe even when used at daily doses much higher than those approved already. Results were compared with published data and data from patients admitted to the hospital receiving other treatments. None of the 131 patients presenting mild symptoms needed to be hospitalized.

From the 37 who had to be admitted at the time of first visit (because of the severity of their state), only one patient died (0.59% of all included patients vs. 2.1% overall mortality for the disease in Argentina). That meant 3.1% death rate of hospitalized patients vs. 26.8% mortality in published data. IDEA protocol proves to be a useful alternative to prevent disease progression of COVID-19 when applied to mild cases and to decrease mortality in patients at all stages of the

disease with a favorable risk-benefit ratio.

## Scenery 2

Despite the B.A. Sanitary Authorities' reluctance to incorporate IVM in the treatment of COVID 19 patients, Dr. Haroldo De Franco, between May and November 2020, applied IVM-based treatment on a total of 124 out patients with confirmed COVID infection at Mercante Public Hospital.

Average age: 61 years.

Women: 70; Men: 54

Without comorbidities: 18

Main comorbidities

Respiratory: 32

Obesity (with and without associated DM): 38

Cardiovascular (HTN): 31

Neurological: 3

Need for hospitalization after diagnosis and treatment: 1 (0.008%), whose evolution was benign.

## Essex, United Kingdom

Dr. Sanjid Seraj performed a statistical investigation of all the above-mentioned data. Taking into account the number of subjects with confirmed diagnosed (mostly by rt-PCR, and some because of the epidemiological fact that they were close contacts to confirmed cases and had developed symptoms), there was a total of 806 patients. The average age was 57, 08.

From them, international literature mentions 10% need of ulterior admittance, due to worsening of symptoms and other risk factors. Moreover, the same literature implies that –once admitted–the chances of a bad evolution and death arises to 25%. In the cases treated promptly with IVM, only 3 subjects had to be admitted (0.0037%), while the expected need would have been roughly 80. And there was just 1 sudden death (0.0011%), while the international figures speak of no less than 31 subjects.

Taken together, these figures account for a 95.5% reduction in the need of hospitalization, and also a 95.6% reduction in death rate, when IVM treatment was applied at the early stages of the disease [9-12].

## Conclusion

From the statistical point of view, IVM has already proved its effectiveness against COVID 19 infection in all stages of the disease. The meta-analysis is also proved that an early treatment is far more effective than a delayed one. The amount of data supporting the need to incorporate IVM amid the options of treatment against COVID 19 is countless. We present a local part of these investigations, with the belief of having done what is best for our patients, and the wish to open the eyes of those in charge of public health. Our figures account for a 95.5% reduction in the need of hospitalization, and a 95,6 reduction in death rate, when IVM treatment was applied at the early stages of the disease, in consonance with existing data. According to ours and other international data, roughly 11,000 lives worldwide could have been saved daily, by simply adding IVM as the treatment offered to COVID 19 patients.

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