

PRIMARY DATA ON REDUCTION OF CONSEQUENCES OF COVID-19 THROUGH THE USE OF *PROPOLIS* IN ALBANIAN PATIENTS

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Abstract

During 2020- 2021 Albania faced COVID-19 pandemics. According to the data gathered by World Health Organization, Albania is classified as a high mortality state as a result of the pandemics. However, several infected patients applied the use of *Propolis* and its mixtures accompanied by oregano oil as a means to treat COVID-19. In this study realized from March 2020 to August 2021, almost 3500 infected patients, part of which beekeepers were treated with *Propolis* and oregano oil to fight COVID-19. This study observed their health improvements by surveys conducted via telephone calls and consults in alternative medicine clinic "Merja" health. According to the results from this sample of patients, only 3% had average health issues caused by the pandemics, whereas the other 97% treated with *Propolis* and Oregano, had no complications regarding COVID-19 and did experience its symptoms without issues. What makes the study quite interesting is the fact that none of the treated patients did die. Overall, the study combines the application of *Propolis* and oregano products with biochemical evaluation as a methodology to raise body immunity and reduce COVID-19 effects in humans.

Keywords: propolis , oregano oil, COVID-19, virus, Albania, immunity.

1. Introduction

Among the most dangerous pandemics humanity has ever faced, pandemics caused by COVID-19 the scariest for the modern times. Numerous deaths, uncontrolled spread and inability of finding a standard treatment protocol for infected people have been the cause of the largest spread of this pandemic in the world. (1). Humanity has historically utilized natural products to reduce the effects of various viruses, such as seasonal flu, various bacterial diseases, or to mitigate the clinical framework of these diseases. (2) Also, during this pandemic, the use of natural extracts has been considered as an alternative to mitigate the deadly effects of COVID-19, and to strengthen body's immunity to recover from this disease. Based on the preliminary scientific data which existed and based on the century-old experience that existed, during this pandemic, the use of propolis tincture or its mixture with oregano oil, was requested and applied to treat the symptoms, but also to increase the immunity of the organism. (3) Based on many studies, propolis reduces a considerable number of symptoms of SARS-CoV-2 infection, interfering with several metabolic cycles. (4) Studies have proven that propolis extracts act against some serious targets of pathological effects caused by SARS-CoV-2, such as reducing TMPRSS2 expression, and reducing ACE2, which facilitate the entry of the virus into cells. It is already known that propolis originates from plant extracts, which plants utilize to protect themselves from major pathogens. Plants defend themselves from pathogens mainly by producing phytochemicals, many of which have been extracted and used in medicine (5). Bees collect these plant substances including phenols and terpenoids. Phytochemical compounds that show promise for the inhibition of corona virus in humans include quercetin, myricetin, and caffeic acid, all components of propolis. Bees use propolis to protect their colonies against various infections, including bacteria and viruses. It has been noticed that beehives with more

propolis are healthier and stronger. (6) Based on the above effects that propolis has on bee hives and on the bee population, people have utilized these effects to treat many diseases or many treatments to increase immunity.

2. Method used

Propolis was provided from bee farms in the highlands of southern Albania and northern Albania. This was done with the good intention of providing pure and unpolluted propolis, as propolis can be in urban areas. To provide propolis, we used propolis with a concentration of 20%. The pieces of propolis were crushed and placed in a dark bottle, being dissolved in alcohol 960. The dissolution was carried out in the dark bottles by constantly shaking them several times during the day for 4-5 days. Then it was filtered on filter paper and placed in small brown bottles equipped with droppers. It was recommended for each patient to take 20-30 drops a day. The patients who came to the clinic were registered, their mobile number was taken and an agreement was signed to communicate and follow the effectiveness of the treatment and the effect of the treatment with propolis. A sheet was filled for each patient. The patients, geographical location, sex and age were completely random, since the time the study was carried out was between the years 2020-2021 and this was almost a period of isolation. As per the combined treatment with propolis and oregano oil, it was applied to patients who had signs of cough and signs of cold. For each bottle of propolis, 10 drops of oregano oil were added. The mixture was given to patients to take 10 drops twice a day.

3. Results

During two years of study, 3500 patients of various ages who were infected with COVID-19 or showed similar signs of infection were documented. Patients were from different provinces and a good part of them were beekeepers living in rural areas. We must say that the number of patients who were treated with the two components, with propolis and mixed oregano oil, was greater than 3500, but we included in the study only patients who strictly followed this treatment and their identification and follow-up was easier.

In the table below, we present the number of patients who were treated with propolis and the mixture of propolis and oregano oil, respectively by region:

No	The region of patients treated with propolis and propolis and oregano oil	No. of patients	Fully treated patients	A patient who needed additional treatments
1	Tirana	530	499	31
2	Elbasani	335	324	11
3	Korca	270	260	10
5	Erseka	50	46	4
6	Gjirokastra	75	74	2
7	Permeti	44	43	1
8	Tepelena	106	101	5
9	Saranda	60	58	2
10	Vlora	223	219	4
11	Fieri	210	208	2
13	Mallakastra	266	257	9
14	Durresi	213	210	3
15	Kavaja	67	66	1

16	Shkodra	188	183	5
17	Lezha	52	52	0
18	Kukesi	212	209	3
19	Tropoja	110	108	2
20	Dibra	203	199	4
21	Kamza	120	117	3
22	Emigrants	166	163	3
	Total	3500		105

4. Discussions

This is the first study carried out in Albania in the period of COVID-19 with the application of propolis or the mixture of propolis with oregano oil. The results obtained were surprising, since we are talking about a considerable number of patients involved in the study. The number of 3500 patients is considerable, when it comes to Albania, which has a population of 3.5 million inhabitants. Although the study was carried out during COVID-19, the 3,500 patients included in the study were monitored through cell phone communication, through cell phone consultations and messages, and their health progress was recorded by the staff of the Alternative Treatment Clinic "Merja sh.p.k. ". All the data obtained from the study of the cases confirmed the indisputable role of propolis as an antiviral, as a result of the presence in its composition of Lemon, Quercetin and Kaempferol (7). This was proven by almost 87% of the cases of patients under study, where by using propolis for about 5 consecutive days 10 drops every meal, their health condition improved and the patients recovered. This was a strong indicator for the antiviral values of propolis. This effect was demonstrated as early as the first 5 days of treatment, although the treatment for all patients lasted over 30 days. Compared to other patients who do not use propolis, self-recovery (improvement of health condition), as well as preservation of vital indicators such as oxygenation over 95%, as well as reduction of muscle pain, reduction of temperature and sore throat, as well as elimination of body weakness. As a result of the presence of Quercetin, which inhibits thrombin in thrombotic manifestations, the patients involved in the study did not manifest thrombocytosis, this is also thanks to the presence of Kaempferol and Hesperetin (8)

On the other hand, we have applied the mixture of propolis with oregano oil. The curative effects of oregano are known, oregano oil is also considered a powerful natural antibiotic. In our study, we applied a mixture of 5 drops of 100% pure oregano oil with 20 ml of propolis. This mixture is recommended to be taken by people who were affected by COVID-19 for 12 days. Our study found an almost 97% effective treatment against bronchitis and bronchopneumonia that COVID-19 created in sick people. (9) Only 3% of people needed additional treatments. Undoubtedly, the study needs pharmacological interpretations and deeper studies, but our study based on clinical data takes a good step to study the effects of propolis and the effects of mixtures between propolis and oregano oil. (10) Regarding the dose used, during our study we relied on similar studies in other countries and applied the use of a dosage of 30 drops/day or 500mg daily dose. This dosage is optimal and tolerable by the body, producing no side effects. (11)

5. Conclusion

Our initial and modest study has achieved the documentation of some important effects of propolis in patients who have used it. All patients accepted the anti-inflammatory and immunoregulatory effects of propolis. The study has also confirmed the inhibitory role for ACE2, a major target of the SARS-CoV-2 virus for host cell invasion. The study has showed evidence of a strong anti-inflammatory effect of propolis if it is mixed with oregano oil, showing strong effects against infections in the respiratory system and eliminating cases of bronchopneumonia in the major part of the study. The study showed evidence of faster recovery of people affected by COVID-19 and treated with propolis compared to the group of people who stopped or did not use treatment with propolis. Another conclusion of our study was the fact that none of the people involved in the study presented side effects during the use of propolis. Undoubtedly, this is an initial study and we are sincerely aware that our study needs more in-depth studies combined with pharmacological studies, molecular biology studies.

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