

Using Frankincense-Soak as Saudi-Habit for Eliminating the Microbial-Causes of Respiratory-Tract During Corona-Pandemic

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ABSTRACT

The frankincense-soak using for pulmonary infection by Arab-habit, particularly during the pandemic disease COVID-19. It worldwide still using for the treatment of respiratory tract infections. The extracts and essential oils using as antibacterial in treat coughs. It used since ancient times for instated of medicine. The aim was according to the frankincense-soak using for pulmonary infection by Arab-habit, particularly in the present time due to the pandemic disease COVID-19. So, frankincense-soak chemicals contents had the ability to eliminate microbial-causes of respiratory-tract. It was an Arab-habit in order to eliminate the microbial infection of the respiratory-tract. Therefore, the Saudi-habit was tested on the most important microbial causes were isolated from the respiratory-tract during Corona-pandemic. It was very common during Corona-pandemic for decrease infection signs, fastest cure, and protection from Corona-virus infection. The methodology included preparation of frankincense-soak, preparation of pathogenic bacteria and fungi, and exposure to frankincense-soak. Prevalence of bacterial living cell/mL after exposure to frankincense-soak, the mean for *Streptococcus pneumonia* was 29.4, *Klebsiella pneumonia* was 38.5, and *Pseudomonas aeruginosa* was 42.1 respectively. So, the Gram-negative bacteria were more resistant to frankincense-soak than Gram-positive bacteria. They were taken longer time than gram positive bacteria. Prevalence of fungal living cell/mL after exposure to frankincense-soak, the elimination mean for *Candida* sp. was 47.2, and *Aspergillus* sp. was 50.7 respectively. So, *Aspergillus* sp. were more resistant to frankincense-soak than *Candida* sp. It was concluded through the result that the use of frankincense-soak eliminated microbial causes and strengthens the respiratory-tract in short periods. It was recommending the use of frankincense-soak as an alternative medication with the discretion decided by the "Pharmacy Department" for quick treatment without any side effects.

KEYWORDS: Frankincense-soak; Arab-habit; Corona-pandemic; Living cell; Bacterial; Fungal

INTRODUCTION

The frankincense-soak using for pulmonary infection by Arab-habit, particularly during the pandemic disease COVID-19 [1]. It worldwide still using for the treatment of respiratory tract infections [2]. The extracts and essential oils using as antibacterial in treat coughs [3]. It used since ancient times for instated of medicine [4]. The contents subordinate metabolites, as phenol, alkaloids, resins, essential oils, and gum, responsible for therapeutic effects [5]. The main contents are a-pinene 43%, Eritrean, Turkish oils are rich in octyl acetate 52%. The Indian oil is rich in a-thujene 61% [6]. It has 70% alcohol-soluble resin, 17% water soluble gum and 6%

essential oil, had therapeutic potential. The essential oil and gum resin has been used to treat different diseases, had antimicrobial effect [7]. It had precious, ubiquitous, and antimicrobial action [8]. The antibacterial action of its essential oil was found important against Gram-positive and Gram-negative bacteria [9]. That it had moderate to higher antibacterial effect on various types of bacteria [10]. The oils had an antibacterial activity stronger than the tetracycline [11]. Flavonoids and phenolic compounds were the main constituents had the antimicrobial action. The extract was more efficient on *Streptococcus pneumonia* and on *Klebsiella pneumonia* [12]. The oils had highest zone of inhibition for

Quick Response Code:



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Received: March 16, 2022

Published: May 03, 2022

How to cite this article: Sherifa MMS. Using Frankincense-Soak as Saudi-Habit for Eliminating the Microbial-Causes of Respiratory-Tract During Corona-Pandemic. 2022- 4(3) OAJBS.ID.000445. DOI: 10.38125/OAJBS.000445

Klebsiella pneumonia, and *Pseudomonas aeruginosa* [13]. The oil exhibited antibacterial activity against *Pseudomonas aeruginosa* clinical isolates. Also, it had antibiofilm activity caused a significant reduction in biofilm formation 38.5% [14]. The antifungal and effect of essential oil inhibited the growth of fungi mycelia. The oil reduced aflatoxin production [15]. The essential oil had high effect on *Candida* sp., also extract treated diseases caused by *Candida* sp. [16]. As well, the effect of physical and synthetic chemical preservatives of oils and their aflatoxins inhibition activity, it had inhibition of aflatoxin secretion by *Aspergillus* sp. [17]. The aim was according to the frankincense-soak using for pulmonary infection by Arab-habit, particularly in the present time due to the pandemic disease COVID-19. So, frankincense-soak chemicals contents had the ability to eliminate microbial-causes of respiratory-tract. It was an Arab-habit in order to eliminate the microbial infection of the respiratory-tract. Therefore, the Saudi-habit was tested on the most important microbial causes were isolated from the respiratory-tract during Corona-pandemic. It was very common during Corona-pandemic for decrease infection signs, fastest cure, and protection from Corona-virus infection.

MATERIALS AND METHODS

Preparation of Frankincense-Soak

Frankincense was bought from the Saudi-market, it was crushed, then five grams was put in 250ml distilled water. Then, it was left for 12 hours at room temperature to get frankincense-soak. This was based on the question of Saudi-individuals about the preparation way. This was produced crude frankincense-soak, then it was made the dilution by distilled water for (10, 20, 30, 40, and 50%); [18].

Preparation of Pathogenic Bacteria and Fungi

They were collected from the "Private Laboratory", were isolated from the respiratory-tract infections of Corona infected patients. They were included the pathogenic *Streptococcus pneumonia*, *Klebsiella pneumonia*, *Pseudomonas aeruginosa*, *Candida* sp., and *Aspergillus* sp. They were prepared on "Mueller Hinton Broth"; (Lab M Ltd., UK). Then they were collected by centrifugation, splashed,

resuspended, and attuned to 0.5 at 600 nm like to 106 colony formation units (CFU)/mL [19].

Exposure to Frankincense-Soak

Twenty tubes were prepared for each pathogenic bacteria and fungi. Two mL of the microbial suspension were added, then two mL of the frankincense-soak dilutions were added. The tubes were kept in incubator for the exposure periods (30, 60, 90 and 120 minutes). Then, after the frankincense-soak exposure periods, the mixtures were passed by bacterial film convenient, then the living cells/mL were counted [20].

Numerical Analysis

Completely values results were preserved by "IBM SPSS Figures Package 21"; (IBM, Armonk, NY, United States) [21].

RESULTS AND DISCUSSIONS

Prevalence of Bacterial Living Cell/ML after Exposure to Frankincense-Soak

It was clear from the result in Table 1 that presented the mean for *Streptococcus pneumonia* was 29.4, *Klebsiella pneumonia* was 38.5, and *Pseudomonas aeruginosa* was 42.1 respectively. So, the Gram-negative bacteria were more resistant to frankincense-soak than Gram-positive bacteria. They were taken longer time than Gram-positive bacteria [2-11]. Frankincense-soak eliminated *Streptococcus pneumonia* by 30% at 120 minutes, by 40% at 120 minutes, and by 50% at 90, and 120 minutes [12]. Frankincense-soak eliminated *Klebsiella pneumonia* and *Pseudomonas aeruginosa* by 50% at 120 minutes only. This indicated that Gram-negative bacteria were more resistant to the effect of the frankincense-soak than Gram-positive bacteria [13-14]. The use of the frankincense-soak was as Saudi-habit, especially during Corona-pandemic period. It used to help in reducing symptoms, eliminating microbial causes of the respiratory tract. As well that could be reduced infection with the Coronavirus by strengthening the respiratory system [1-2]. The most patients resorted to using herbal treatment, a form of Arabia Saudi-habit, to reduce the using of chemotherapeutic substances that could be leave side effects on the individuals [2-7].

Table 1: Prevalence of bacterial living cell/ml after exposure to frankincense-soak.

Frankincense-Soak %	Time in Minutes	<i>Streptococcus pneumonia</i>	<i>Klebsiella pneumonia</i>	<i>Pseudomonas aeruginosa</i>
10%	30	92	96	98
	60	68	76	82
	90	41	49	61
	120	22	31	34
20%	30	76	81	83
	60	45	54	57
	90	23	35	42
	120	5	12	17
30%	30	62	69	71
	60	33	48	53
	90	16	30	31
	120	00	14	18
40%	30	36	53	59
	60	17	29	30
	90	5	12	14
	120	00	5	8

50%	30	29	41	43
	60	17	23	27
	90	00	11	13
	120	00	00	00
Mean		29.4	38.5	42.1

Prevalence of Fungal Living Cell/MI After Exposure to Frankincense-Soak

It was clear from the result in Table 2 that presented the elimination mean for *Candida* sp. was 47.2, and *Aspergillus* sp. was 50.7 respectively. So, *Aspergillus* sp. were more resistant to frankincense-soak than *Candida* sp. They were taken longer time and higher mean than *Candida* sp. [15-17]. Frankincense-soak was

eliminated *Candida* sp. and *Aspergillus* sp. by 50% at 120 minutes only [15-17]. The use of the frankincense-soak was as Saudi-habit, was during Corona-pandemic period. That was to help reducing signs, killing respiratory-tract microbial causes. That could be reduced Corona-virus infection via respiratory system firming [1-2]. Most Arab persons using herbal treatment, as Arabia Saudi-habit, to decrease using of chemotherapeutic treatment could be leave patients side effects [2-7].

Table 2: Prevalence of fungal living cell/ml after exposure to frankincense-soak.

Frankincense-soak %	Time in minutes	<i>Candida</i> sp.	<i>Aspergillus</i> sp.
10%	30	99	101
	60	80	83
	90	59	61
	120	36	39
20%	30	87	90
	60	71	77
	90	59	62
	120	38	43
30%	30	72	78
	60	58	63
	90	45	47
	120	23	27
40%	30	58	62
	60	42	45
	90	24	27
	120	12	16
50%	30	41	44
	60	28	33
	90	12	15
	120	00	00
Mean		47.2	50.7

CONCLUSION

It was concluded through the result that the use of frankincense-soak eliminated microbial causes and strengthens the respiratory-tract in short periods.

RECOMMENDATION

It was recommending the use of frankincense-soak as an alternative medication with the discretion decided by the "Pharmacy Department" for quick treatment without any side effects.

ACKNOWLEDGMENT

Thanks to the "Private Laboratory" for helping to provide isolates to conduct this research.

REFERENCES

- Claxton S, Porter P, Brisbane J, Bear N, Wood J, et al. (2021) Identifying acute exacerbations of chronic obstructive pulmonary disease using patient-reported symptoms and cough feature analysis. *NPJ Digit Med* 4(1):107.
- Alamgeer W, Asif H, Sharif A, Riaz H, Bukhari A, et al. (2018) Traditional medicinal plants used for respiratory disorders in Pakistan: A review of the ethno-medicinal and pharmacological evidence. *Chin Med* 13:48.
- Yeshi K, Wangchuk P (2022) Herbal biomolecules in health Applications. Essential oils and their bioactive molecules in healthcare pp. 215-237.
- Langenheim H (2003) Plant Resins: chemistry, evolution, ecology, and ethnobotany. Timber Press, Inc: Portland, OR, USA pp. 978-0881925746.
- Mitra S, Prova R, Sultana A, Das R, Nainu F, et al. (2021) Therapeutic potential of indole alkaloids in respiratory diseases: A comprehensive review. *Phytomedicine* 90: 153649.

6. Al Yasiry M, Kiczorowska B (2016) Frankincense therapeutic properties. *Postepy Hig Med Dosw (online)* 70: 380-391.
7. Rashan L, Hakkim L, Idrees M, Essa M, Velusamy T, et al. (2019) Boswellia gum resin and essential oils: Potential health benefits, An evidence-based review. *International Journal of Nutrition, Pharmacology Neurological Diseases* 9(2): 53-71.
8. Soliman M, Majeed R, Himyari A, Um D, Khan A (2020) *In Vitro* cytotoxic, antioxidant and antimicrobial activities of alcoholic and chloroform extracts of Dhofari Frankincense. *Dhaka Univ J Pharm Sci* 19(2): 105-110.
9. Ayub A, Hanif A, Blanchfield J, Zubair M, Abid A, et al. (2022) Chemical composition and antimicrobial activity of *Boswellia serrata* oleo-gum-resin essential oil extracted by superheated steam. *Nat Prod Res* 1-6.
10. Seku K, Hussaini S, Hussain M, Siddiqui A, Golla N, et al. (2022) Synthesis of Frankincense gum stabilized AgNPs by microwave irradiation and their catalytic, antioxidant and antibacterial properties. *Physica E: Low-dimensional Systems and Nanostructures*, 115169.
11. Bakheit M, Omer A (2021) Antimicrobial activity of *Boswellia papyrifera* essential oil against clinical bacterial pathogens. *African Journal of Medical Sciences* 6(2).
12. Al-Dosary K (2018) Antibacterial effect of *Thymus* sp. and *Boswellia* sp. extracts on *Streptococcus pneumoniae* and *Klebsiella pneumoniae* isolates. *African Journal of Biotechnology* 17(5): 133-138.
13. Benabdesslem Y, Ghomari S, Adli H, Mébarki M, Hachem K (2022) Chemical composition and antibacterial activity of essential oil derived from the leaves of *Argania spinosa* (L.) grown in Northwestern Algeria. *Journal of Essential Oil-Bearing Plants* 1-8.
14. Alotaibi B, Negm A, Elekhaway E, El Masry A, Elseady, S, et al. (2021) Antibacterial, immunomodulatory and lung protective effects of *Boswellia dalzielii* oleoresin ethanol extract in pulmonary diseases: *in vitro* and *in vivo* studies. *Antibiotics* 10(12): 1012-1444.
15. Venkatesh N, Tungeti N, Sudharshana R, Umesh A, Sreerange Gowda T, et al. (2017) Antifungal and anti-mycotoxigenic properties of chemically characterized essential oil of *Boswellia serrata* Roxb. ex Colebr. *International Journal of Food Properties* 20(2): 1856-1868.
16. Qureshi W, Saeed F, Ajaz M, Rasool A (2022) *In vitro* antimicrobial, antibiofilm and antiphage activity of thyme (*Thymus vulgaris*). *Pak J Bot* 54(3): 1121-1128.
17. Karthikeyan G, Swamy K, Viknesh R, Shurya R, Sudhakar N (2020) Bioactive phytochemicals to fight against antimicrobial resistance. *Plant-Derived Bioactives* 335-381.
18. Sharifi Rad J, Sureda A, Tenore C, Daglia M, Sharifi Rad M, et al. (2017) Biological activities of essential oils: From plant chemo-ecology to traditional healing systems. *Molecules* 22(1): 70.
19. Sievert M, Ricks P, Edwards R, Schneider A, Patel J, et al. (2013) Antimicrobial-resistant pathogens associated with healthcare-associated infections: Summary of data reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention 2009-2010. *Infect Control Hosp Epidemiol* 34(1): 1-14.
20. Maksud A, El Sayyad S, El Bastawisy S, Fathy R (2021) Antibacterial and antibiofilm activities of silver-decorated zinc ferrite nanoparticles synthesized by a gamma irradiation-coupled sol-gel method against some pathogenic bacteria from medical operating room surfaces. *RSC Advances* 11(45): 28361-28374.
21. Ciaranello A, Bell T (2021) Using data and modeling to understand the risks of in-person education. *JAMA Netw Open* 4(3): e214619.