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Evaluating the Efficacy and Safety of Cymbopogon Schoenanthus Syrup for Asthma and Allergies: A Two-Decade Clinical Study

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ABSTRACT

Asthma and allergies are prevalent respiratory conditions affecting millions worldwide, often necessitating long-term management and treatment. Synthetic medications, while effective, may pose risks and adverse effects, prompting exploration into natural alternatives. This study investigates the efficacy and safety of a botanical syrup supplement derived from *Cymbopogon Schoenanthus* subsp. *proximus*, known as “Binj” or “Abba” in the United Arab Emirates (UAE), for the management of asthma and allergies. Through collaborative efforts with reputable laboratories and universities, the botanical syrup’s therapeutic potential was rigorously evaluated, encompassing phytochemical analysis, biological testing, and extensive clinical trials spanning two decades. Results demonstrate notable improvements in lung function and skin health among patients with asthma and allergies, evidenced by enhanced vital capacity, forced vital capacity, and visible reduction in skin allergy symptoms. Furthermore, safety assessments indicate a favorable profile, with minimal adverse events reported. The recognition of the botanical syrup by the UAE Ministry of Health and international pharmaceutical companies underscores its significance and potential for widespread application. This discovery represents a promising advancement in natural medicine, offering a safe and effective alternative for individuals seeking holistic respiratory wellness. Future research should focus on large-scale clinical trials and long-term safety studies to further elucidate its therapeutic benefits and optimize clinical outcomes.

INTRODUCTION

Asthma, a chronic inflammatory disorder, causes respiratory inflammation and narrowing of the airways (Sinyor & Perez, 2023). On the other hand, allergies occur due to the immune system’s responsiveness to harmless stimuli (Kucuksezir *et al.*, 2020). Asthma is a major health concern affecting millions of people of different ages and regions worldwide. According to recent studies, asthma has been reported to be prevailing in UAE children with varying rates across different regions (Dghaim *et al.*, 2022). It has been seen that both innate and adaptive immune responses have a significant role in the pathogenesis of asthma and other related allergies (Hillion *et al.*, 2020). Where synthetic medicines use has become a costly treatment with several side effects, including respiratory infections (bronchitis, nasopharyngitis, sinusitis), headaches and pain, gastrointestinal issues, dysphonia, cough and throat irritation, making the health of asthmatic patients more vulnerable, the emergence of natural products are gaining attention and promising treatment (Johnson *et al.*, 2019; Verma *et al.*, 2023).

Botanical supplements have shown great potential in antiasthmatic therapy due to their ability to modulate the immune response and reduce inflammation (Di Sotto *et al.*, 2020). Among these supplements, discovering botanical syrup is a breakthrough, offering new hope for patients struggling with these respiratory conditions. Botanicals offer diverse bioactive compounds (anti-inflammatory, bronchodilator, immunomodulatory

and anti-oxidant properties) with therapeutic benefits. Research has highlighted the selection of a United Arab Emirates native plant, *Cymbopogon Schoenanthus* subsp. *proximus*, known as “Binj” or “Abba” locally, made it a compelling candidate used in the development of botanical syrup to treat asthma and skin allergies because of its abundant medicinal properties, including essential oils and secondary compounds having additional antifungal, antimicrobial, antiacetylcholinesterase and wound healing properties (Di Sotto *et al.*, 2020).

This offers a holistic approach to healthcare, offering patients a natural and effective solution for managing both respiratory and dermatological conditions. This innovative formulation capitalizes on the plant’s therapeutic properties, providing a safe and accessible alternative to conventional treatments that may be expensive and associated with side effects.

MATERIALS AND METHODS

The Eastern Mediterranean region has a long and rich history of utilizing natural products such as medicinal plants for drugs and medicinal purposes. Despite knowledge of local herbalists being passed on several generations, there is currently limited research on the safety, efficacy, and potential benefits of using herbalists to treat various health conditions or diseases.

This study covered all aspects that are usually lacking in recent research, and while using traditional methods, Abba botanical supplement syrup was introduced in

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2003. The methodology section of the research article focused on *Cymbopogon schoenanthus* subsp. *proximus* begins with an emphasis on ensuring the herb's safety for human consumption. It highlights the laboratory's involvement in assessing the herb's safety parameters. By 2005, the UAE Ministry of Health had also licensed the Abba Factory to produce botanical preparations meeting pharmaceutical specifications for therapeutic purposes. Furthermore, the Ministry of Health officially confirms that Abba herbal preparations, being pure and natural, are not subject to drug control or registration by the ministry. The methodology outlines the development of Abba Supplement Syrup, specifically designed to serve as a botanical remedy for asthma, allergies, and overall lung health support.

Several key steps were involved, from investigating the medicinal properties of Abba to manufacturing botanical supplement syrup.

Traditional Techniques

Wild plant (Abba) Collection and Identification

Plant specimens were collected from the natural habitat northeast of Jeddah, Saudi Arabia, ensuring proper identity and originality.

Extraction of Bioactive Compounds

The collected sample, including roots, seeds and leaves, were subjected to various extraction techniques, including maceration, distillation, decoction and infusion. Each of these methods was used to achieve a different target, such as extraction of medicinal properties, aromatic and therapeutic elements, which assist in syrup manufacturing.

Experimental Approach

Cooperation with Laboratories and Universities

Collaborative efforts with well-established laboratories and universities enhanced the analysis and evaluation of Abba plant extracts, ensuring robust scientific validation.

Phytochemical Analysis and Biological Testing

The researcher evaluated extracted bioactive compounds for antimicrobial, antioxidant and cytotoxicity activities, following phytochemical analysis using standard protocols and established methods.

Filtering and Cleaning

Further, filtration ensures purity by eliminating impurities and solid products from the extracted solution aiding in next step of processing.

Concentration and Standardization

Employment of different experimental techniques such as evaporation and vacuum distillation used to achieve standardized potency and consistency under controlled environment.

Therapeutic Effects Determination

Through cooperative efforts of AU-KBC Research Centre and Umm Alqura University, extensive clinical trials for twenty years, medicinal and therapeutic effects of Abba plant extracts were determined, validating their efficacy and safety for botanical syrup supplement formation and application to the world.

Patent Registration and International Recognition

The research culminated in the registration of a patent for the Abba plant extracts, reflecting their novel and innovative nature. Additionally, the project was recognized with a silver medal at an international patents conference, highlighting its significance and contribution to the field of herbal medicine.

RESULTS

The study yielded compelling results regarding improvement of asthma and allergies in patients, with providing positive results for overall health of the lungs and supporting respiratory health.

Notably, a study of pediatric initially suffering from shortness of breath relied on conventional treatment methods, including steam masks and medication. However, taking herbal syrup as a medicine, twice a day at 2 ml dosage, abated the chronic symptoms and gradually faded the use of conventional treatment methods. It is to be noted that this medication was replaced as a daily feed supplement used as a precaution to protect the child from cold weather. Currently at the age of 14 years old, by taking it for a longer period, the patients' health showed significant

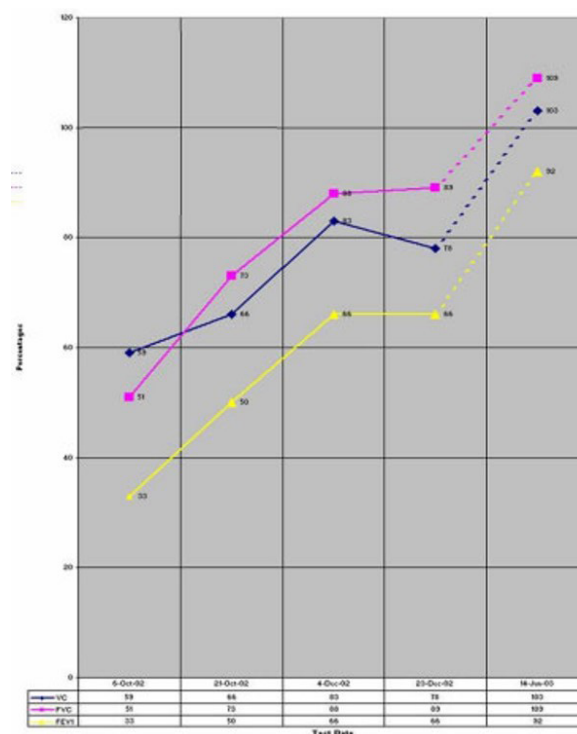


Figure 1: pulmonary test report of patient 1

improvement with no signs of asthma recurrence. Moreover, introducing this supplement syrup to young adults in figures below showed overall positive trends in lung functions with notable improvements in vital capacity and forced expiratory volume.

Figure 1 shows significant increase in Vital Capacity (VC) readings, Forced Vital Capacity (FVC) and Forced Expiratory Volume in one second (FEV1) indicating enhanced lung capacity, ability to exhale more air after a deep breath and improvement in the ability to exhale air forcefully. These findings collectively suggest a positive response to botanical syrup supplement treatment aimed at enhancing respiratory function, underscoring the potential for improved overall lung health in patient 1. In addition to the encouraging improvements observed in lung health of asthma patients, corresponding positive outcomes were noted in patients suffered from skin

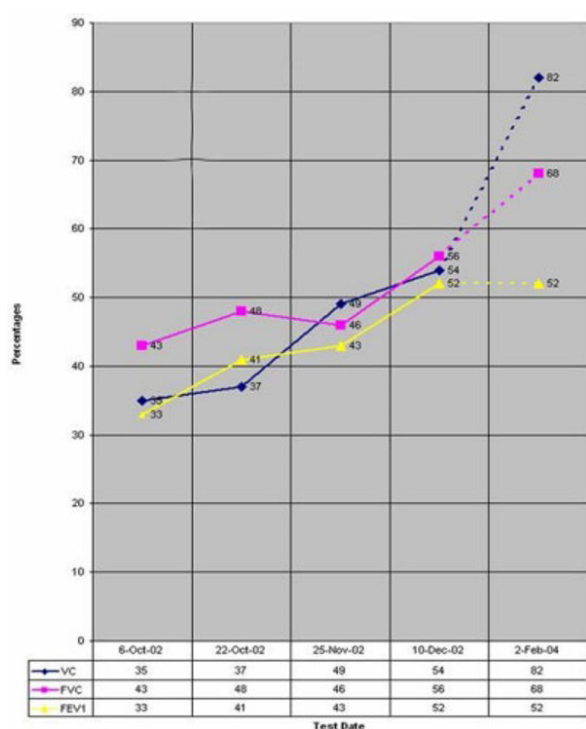


Figure 2: Pulmonary test report of patient 2

allergies, such as shown in figures below.

Figure 2 shows significant increase in Vital Capacity (VC) readings, Forced Vital Capacity (FVC) indicating enhanced lung capacity and the ability to exhale more air after a deep breath. While the Forced Expiratory Volume in one second (FEV1) initially showed a substantial rise, and remained stable thereafter, indicating sustained improvement in the ability to exhale air forcefully. These findings collectively suggest a positive response to botanical syrup supplement treatment aimed at enhancing respiratory function, underscoring the potential for improved overall lung health in patient 2.

Figure 3 illustrates a visible improvement in a texture of skin, treating skin allergy, such as eczema or psoriasis, observed on the arms of Patient 1, who has been regularly consuming a botanical syrup supplement as an alternative to medication. Figure 4 illustrates a visible improvement in a texture of



Figure 3: Evidence of improvement of skin allergy in patient 1

skin, treating skin allergy, such as eczema or psoriasis, observed in Patient 2's neck region, who has been regularly consuming a botanical syrup supplement as an alternative to medication.

Furthermore, investigation of this study also uncovered additional evidences that support the efficacy of the Abba Supplement Syrup includes UAE Ministry of Health in 2005 providing license to Abba Factory for the manufacturing and production of botanical products for therapeutic purposes with pharmaceutical specifications, confirming products' adherence to safety and quality standards. Additionally, international pharmaceutical companies have shown interest in importing Abba

botanical chlorophyll for supplement manufacturing, underscoring the growing recognition of its potential therapeutic benefits. These results collectively highlight the compelling benefits and results of the Abba supplement syrup as a natural remedy for asthma management and respiratory wellness.



Figure 4: Evidence of improvement of skin allergy in patient 2

DISCUSSION

The discovery of botanical syrup supplements as a potential treatment for asthma and allergies represents a significant advancement in natural medicine (Gulati *et al.*, 2021). Asthma and allergies are prevalent respiratory conditions that affect millions worldwide, often requiring long-term management and treatment. Traditional herbal remedies have long been explored for their therapeutic properties, and developing a botanical syrup supplement offers a promising alternative for individuals seeking natural remedies (Parham *et al.*, 2020). Botanical syrups derived from plant sources have gained attention due to their bioactive compounds that exhibit anti-inflammatory, bronchodilator, and immunomodulatory

properties (Saini & Dhiman, 2022). These properties are crucial in managing asthma symptoms by reducing airway inflammation, improving bronchial function, and modulating the immune response associated with allergic reactions. The botanical syrup supplement harnesses the synergistic effects of various plant compounds to provide a holistic approach to respiratory health. Discovering and formulating this botanical syrup supplement involved rigorous scientific research, including phytochemical analysis, pharmacological studies, and clinical trials. Researchers identified specific plant species known for their anti-asthmatic and anti-allergic properties, carefully selecting and combining botanical extracts to optimize therapeutic efficacy (Shaheen & Jaffer, 2021). The formulation process aimed to create a safe, effective, and standardized botanical syrup that could be easily administered and integrated into existing treatment regimens. Clinical trials evaluating the efficacy of botanical syrup supplements in asthma and allergy management have shown promising results. Patients using the botanical syrup experienced improved lung function, reduced frequency of asthma attacks, and alleviated allergy symptoms. Moreover, the botanical syrup's favorable safety profile and minimal side effects make it a viable option for individuals seeking natural alternatives or complementary treatments to conventional medications.

Safety Assessment

An essential aspect of any therapeutic intervention is assessing safety and potential side effects. Clinical tests on the Abba plant-based botanical supplement syrup have indicated a favorable safety profile. Adverse reactions have been minimal, with no severe adverse events reported. Moreover, this project is recognized with a silver medal, proving its significance in herbal medicine.

Future Implications and Concerns

The discovery of the Abba plant-based botanical supplement syrup as a potential treatment for asthma and allergies opens up new avenues for future research and clinical applications. Further investigations should focus on large-scale clinical trials and long-term safety studies, which are essential to validate the efficacy and safety of this botanical syrup.

CONCLUSION

In conclusion, this discovery offers a promising alternative for managing asthma and allergies. Its demonstrated efficacy and favorable safety profile highlight its potential as a complementary therapeutic option. However, further research is warranted to fully understand its mechanisms of action, establish optimal dosages, and ensure long-term safety. The development of this botanical supplement syrup represents a significant advancement in the field, holding promise for improved outcomes and enhanced quality of life for individuals suffering from asthma and allergies.

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